1-1-1974

Social ecology in the classroom : curriculum treatment for hearing impaired elementary school children.

Winthrop Freeman Puffer
University of Massachusetts Amherst

SOCIAL ECOLOGY IN THE CLASSROOM: CURRICULUM TREATMENT FOR HEARING IMPAIRED ELEMENTARY SCHOOL CHILDREN

A Dissertation Presented

by

WINTHROP F. PUFFER, JR.

Submitted to the Graduate School of the
University of Massachusetts in Partial
fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Curriculum Studies

December 1974

SOCIAL ECOLOGY IN THE CLASSROOM: CURRICULUM TREATMENT FOR HEARING IMPAIRED ELEMENTARY SCHOOL CHILDREN

A Dissertation

by

WINTHROP F. [redacted]

Approved as to style and content by:

Dr. Robert Sinclair, Chairman of Committee

Dr. Robert Chin

Dr. Douglas Forsyth

Dr. Robert Gonzales

Dr. William Wolf

Dean, School of Education
University of Massachusetts

December 1974

DEDICATION

This study is dedicated to Carl and his classmates at The Amoskeag School. Their hold on life helped to focus the work of this study.

ACKNOWLEDGEMENTS

Without the dedicated aid and persistent support of these people, this study would not have been possible. Mrs. Edna Johnson, for her ever available typing, and willingness to make her time available. Dr. Robert Gonzales, for his understanding of the hearing impaired, and his ever available assistance. Dr. William Wolf, for his coaching on keeping the research strong. Dr. Robert Sinclair, for his support when I started, and his persistence that I finish. The ready response of the administration of The American School and the willing response of the class and their teacher made possible the implementation of the field study.

SOCIAL ECOLOGY IN THE CLASSROOM: CURRICULUM TREATMENT FOR HEARING IMPAIRED ELEMENTARY SCHOOL CHILDREN

A Dissertation Presented

by

WINTHROP F. PUFFER, JR.

Submitted to the Graduate School of the University of Massachusetts in Partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Curriculum Studies

December 1974

SOCIAL ECOLOGY IN THE CLASSROOM:
CURRICULUM TREATMENT FOR HEARING IMPAIRED
ELEMENTARY SCHOOL CHILDREN
(December 1974)

Winthrop F. Puffer, Jr.

B.A. - Tufts University
S.T.B. - Boston University
S.T.M. - Boston University

Directed by Dr. Robert L. Sinclair

ABSTRACT

The present study centers on the problem of modifying the social environment which hearing impaired elementary school age children experience. The social ecology or educational environments of hearing impaired children often fosters social isolation by means of teacher assessments and reinforcement behavior. The development of a curriculum which would alter the social ecology was the major purpose of the present study. To do this, it was proposed to design a micro-curriculum which would modify the students' interaction patterns to such a degree that the teaching expectations for interaction of the students would also be modified.

Two research questions guided the investigation: (1) Does the micro-curriculum contribute to modifications of observations of the children's interaction patterns? (2) Are the children's interaction patterns modified enough to change their teacher's assessment of their patterns of working together?

The above research questions gave shape to this exploratory research that was conducted at The American School for the Deaf. The study used a pre-test, post-test design with the first treatment procedure also being the pre-test. The design has substantial internal validity, but the design does not have external validity because the sample used was not a random representation sample.

The results of the data collected in this exploratory study clearly indicate observations changed and teacher assessments changed in desired directions. These results were strong enough to indicate the following implications.

1. To modify behavior of an individual requires treatment of both the individual and his social ecology or educational environment.
2. Curriculum for students can have impact at two levels; the teacher and the student.
3. Persistent affective problems in classrooms of the hearing impaired are in a major way the responsibility of the curriculum developer.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

BACKGROUND OF THE PROBLEM

Over the years learning problems of the hearing impaired resisted definitive solutions. While solutions to learning problems have not been plentiful, our understanding and our ability to describe such problems have improved. Many learning problems of the hearing impaired stem from the fact that lack of language catastrophically limits one's functioning in the world as we know it. Inability to hear, and lack of language do not mean that an individual lacks the capacity to learn. Education of the deaf is a process of remediation due to the lack of language acquisition. This problem is so overwhelming that educators' prime focus with the hearing impaired has been the development of language acquisition. Research on the intellectual ability of hearing impaired children has been severely hampered because of the communication problems. For example, it is only within recent years that research has focused on the question of whether the hearing impaired ought to be taught orally or manually. This question has persisted since the sixteenth century. Because of its enormity, and our lack of tools with which to teach the deaf, education for the hearing impaired is today on the whole a very tentative proposition.

For those children pre-lingually impaired, the lack of oral communication can plunge them into a world of isolation

during their early years. Many times children are denied normal experiences of intimacy and warmth from family and friends. The problem which emerges for parents of the hearing impaired becomes "How do I teach my child to talk?" Here the controversy between the oralists and the manualists can devastate the child. Parents, for any one of a number of reasons, become committed to teaching their children to speak. In a majority of cases this is a hopeless task. Parents and educators become obsessed with the task of preparing hearing impaired children for integration into the hearing community. The first task for parents and educators is to assist the child in learning language. Learning language, however, does not necessarily mean learning to speak. Hearing impaired children can learn sign language at a very early age. The damage which can be done, in what we understand as the normal development process of children, by these pressures to learn to speak is not yet fully understood.

When the child reaches school, the pressures for integration into the hearing community begin with a vengeance. Research has documented that the child who is considered totally without hearing has a better chance of accepting his abnormality, and a better chance of learning to adapt to it.[1] For the child who has residual hearing, there is always the hope that he can function with little or no attention being paid his hearing impairment. For this child, life will be filled with ambiguity. Does he belong to the deaf community, or to the hearing community? Can he learn to read lips and speak or should he learn sign and be

visibly identified as having a hearing impairment? Can he fit in or will he stick out? He will be a marginal person in our society and as a result, his capability of adapting to his impairment will be less, along with his ability to function being diminished.

The by-products of social isolation in early years and the ambiguity of marginality in society, are experienced in later life when the question of vocational role in society is faced. The effects of social isolation are documented by social workers in the field of rehabilitation as they try to assist the hearing impaired in securing jobs. Social isolation makes it difficult for these people to work with others. As a result many have a hard time keeping jobs, and promotions are not easily come by. The cost of language deprivation and social isolation is paid for by the hearing impaired in their adult years most visibly by inability to adapt to vocational roles.

From a small sample of educational institutions for the deaf, the following observations suggest a problem experienced by all students. Hearing impaired children are not able to work together on a common task for much longer than ten or fifteen minutes.[2] It is rare for hearing impaired children to give assistance to each other with their school tasks. Teachers attempt to design their work each day in such a way that there is a minimum of time spent by the children in groups. This pattern of grouping can reinforce the tendency of students to be isolated socially. Research has put to rest the question, whether or not social immaturity

was directly related to the fact of deafness or to the social environment nurturing the child. The social environment of the child clearly is a determining factor producing social immaturity of hearing impaired children.[3]

The hearing impaired child begins with the crisis of language deprivation. Parents as well as treatment agencies in the community take steps to help remediate the problem, and in so doing, many times heighten the catastrophy by introducing the experience of marginality. It is no surprise that when some children reach their school years between the ages of six and eleven that developmentally they are retarded in social maturation.

THE PROBLEM

The social environment of the hearing impaired elementary school age child is such that assessments of, and reinforcements for social isolation and social immaturity are firmly established. This study is designed to develop a curriculum which will make an intervention in the classroom environment of the hearing impaired child for the purpose of reversing the assessments of and reinforcement for social isolation and socially immature behavior.

PURPOSE OF THIS STUDY

The purpose of the present exploratory study is to develop a micro-curriculum for hearing impaired elementary

school age children that will focus on altering their social immaturity behaviors. The curriculum is used to determine whether or not student patterns of not working together on common tasks for extended periods of time (sixty minutes) can be modified enough so that changed interaction patterns can be recorded by observation. Also it is intended that the modified behavior will be strong enough to cause the teacher to change assessments of the childrens' patterns of working together.

Specifically, this study seeks to answer two research questions:

1. Does the micro-curriculum modify observations of the childrens' interaction patterns?

2. Are the childrens' interaction patterns modified enough to change their teacher's assessments of their patterns of working together?

KEY TERMS DEFINED

The key terms that give direction to this study are:

1. Hearing Impaired - Traditionally a hearing loss of at least 75 or 80 decibels in the better ear is considered to be a dividing line between the deaf and the hard of hearing. A 70 to 90 decibel loss is considered severe. An over 90 decibel loss is considered a profound loss. (See Appendix A for hearing and decibel loss of students used in the field study.) For the purpose of this study hearing impaired will refer to students who have at least 80 or more decibel loss.

2. Interaction behavior patterns - This refers to behavior patterns of interacting that can be visually and auditorally observed and recorded with no attempt to interpret motives or use language cues in classifying the behavior. Noise level or noise intensity or noise focus will influence classification of behavior. The following four categories are used to classify behavior: (a) communications, signs, gestures, and talking, (b) working, (c) organizing, (d) wandering.

Two categories are used for observing communications: (1) Random distancing behavior which will be determined by eye focus and relationship of student to the task physically. It will also relate to whom the student is talking, other students working on the task, or observers outside of the task. (2) Work focused talking will also be determined. This is determined by eye focus and body position in relationship to the task and to whom the student is talking.

Working behavior is categorized in three sub-areas: (1) Working alone randomly in a fashion which is obviously unrelated to what others are doing. (2) Working with others on the task physically focused in collaboration with others. (3) Working with others in a random fashion distancing himself from the task, determined by the student's position in relationship to the task and what task the student is doing in terms of its relationship to the prime task.

Organizing is divided into five categories: (1) Problem-solving on the task is categorized by observing the student physically manipulating materials with others to

solve a problem in the construction of the project. To be an organizing activity, it must be done in connection with others working on the task and not alone. (2) Direct leadership on the task. Organizing will be judged by a student physically giving direction to the main core of workers showing them how to move ahead with the task. (3) Observation of a student focusing at least one other student on the task and encouraging him to work together on the project. (4) Negotiating an interpersonal problem is different from problem-solving in that it will be activity of one student intervening between two others who are fighting over who's going to do what or who's going to have what to do something with. (5) Outright fighting, either fighting over materials or who's going to do what, or what's going to be done.

Wandering behavior has three dimensions: (1) Random wandering behavior which allows the student to distance himself from the activity is not a direct moving away from the task, but an attempt to be less visibly moving away from the activity. (2) Wandering around the activity of the task to look over and get an overall picture of what's being done and what needs to be done. (3) Activity where a student is moving directly away from the task and there is no ambiguity about it. You can see him move away and sit down or just turn his back on the task.

3. Problem-Solving Task - A problem-solving task refers to the completion by the entire class of a specific task using a given set of materials. The students are allowed to take as much time as needed to complete the task. They will decide when the task is completed.

4. Social Immaturity - Egocentricity, immaturity in caring for others, lack of empathy, and impulsiveness characterize social immaturity.

5. Social Environments of the Hearing Impaired - The family, school classroom, and any agency that provides service to the hearing impaired child create a social environment. The present study is limited to the classroom environment.

6. Affective Ecology - The networks of expectations and behavior modeling which a person draws upon in his school life space in order to organize his life cycle for social interaction.

7. Curriculum - Goodlad says of curriculum:

> "...curriculum as a field of study is, at best embryonic...there has been little model or theory-building...By developing a model of the substantive commonplaces of curriculum, and of the political considerations in curriculum planning, we have a backdrop for appraising ideological formulations of what a curriculum should consist of...
>
> Our model poses three levels of political decision-making: societal, institutional, and instructional. We do not say that all then do exist. There are no should's in our model other than the overriding implication that its categories and suggested processes are appropriate to a conceptual model of curriculum...
>
> Curricula are social tools...they give us hope in seeking to accomplish what is, in fact, a hopeless task...Our best outcome is to maintain a dynamic state of tension between our perceptions of where we might be and where we are..."[4]

Curriculum is an imprecisely defined concept. For the purpose of the present study, curriculum will mean those activities which are designed to be used in specific settings to effect specific outcomes at any of three levels: (A) Individual student behavior, (B) Teacher perception

and/or behavior which affects student behavior, (C) The process taking place as a result of several activities sequenced together that will increase the level of cognitive dissonance.

In Goodlad's terms, the micro-curriculum used in this present study focuses on: (1) The societal level in that it is designed to improve the functional interaction in the society of the hearing impaired student. (2) The institutional level in that it is designed to modify the teaching expectations of the students' behavior. (3) The instructional level in that it focuses on the students' learning to strengthen interaction behavior. The overall outcome of the curriculum is at the societal level; specific activities are at the institutional and at the instructional levels.

8. Micro-curriculum - George Posner describes curriculum in the following manner:

> "Curriculum can be conceptualized at different levels of generality depending upon whether structure involves micro- or macro- elements. Micro-elements (individual intended learnings, i.e., cognitions, performance, capabilities, or affects) can be inferred from an analysis of classroom discourse and textbooks; or can be derived directly from lists of objectives and major ideas. Macro-elements (categories of micro-elements) can occur at different levels of generality, ranging from a lesson to a unit, to a course, to a whole program, and are described in syllabi, curriculum guides, course offerings, and program sequences."[5]

For the purpose of the present study, micro-curriculum will signify those curriculum elements focused on an individual behavior change as a terminal objective.

9. Micro-curriculum for Affective Ecology for the Hearing Impaired Elementary School Age Student - Posner says of micro-curriculum:

> "If the curriculum is defined as a 'structured series of intended learning outcomes'...then it is appropriate for curriculum theory and research to be concerned with the selection and the structuring of intended learnings. ...Conceptual frameworks for curriculum structure are needed by curriculum workers. The few experimental studies that have been carried out in this area have only dealt with micro-level structuring as independent variables and with student achievement as the dependent variable. ...However, macro-level curriculum structures are presumed important in every program with prerequisite courses and prescriptions for courses to be taken concurrently. Also, curriculum structure, whether macro- or micro-level, presumably has affective consequences for students and affects the teaching evaluation and instructional planning."[6]

Using the scheme of Posner, the present study develops a micro-curriculum focused on modifying the interactive behavior patterns of children which create an environment of affect. The micro-curriculum is designed to make an intervention into a classroom of hearing impaired students for the purpose of increasing the cognitive dissonance between how learners and teachers view the learning interaction behavior and that behavior itself. The micro-curriculum will enable the students to focus on each other as resources and see themselves as a resource for others, and to develop a longer tolerance for attending together in a group.

There are no prerequisite or concurrent required programs which incorporate this curriculum into a larger curriculum scheme. Thus, it fits Posner's classification as Micro.

SIGNIFICANCE OF THE STUDY

The significance of the present study is both practical and theoretical.

Practical. One practical significance of this study could be a change in curriculum for classrooms of hearing impaired students. The change would be from a focus on subject matter which forces a structuring of the class in such a way that students are isolated and work alone, to a utilization of social learning theory and social science research which brings students together. This would allow a structuring of the class to enable students to work together and utilize each other as resources.

Further significance of this study is that it will demonstrate treatment procedures that could prepare hearing impaired students for integrated classrooms and integration in the outside community. In an integrated classroom and the outside community hearing impaired students cannot and would not be isolated to work alone. These students would need to be able to work in collaboration and cooperation with others on a variety of tasks.

The present study will demonstrate whether or not it is possible for hearing impaired students to increase their ability to work with other people on a common task for an extended period of time (sixty minutes). The study will also demonstrate whether or not it is possible for the hearing impaired students to utilize each other as learning

resources. Some of the techniques in the treatment procedure may also be used to assist the hearing impaired in developing a functional language experience.

Another practical significance of this study is its focus on the possibility of changing the teacher's assessment of the hearing impaired students ability to focus constructively for a period of time longer than 15 minutes in a group, as opposed to viewing isolation as the most meaningful way significant learning can take place.

Theoretical. The micro-curriculum used in the present study was developed utilizing the work of behavioral science in the fields of modeling learning theory, teacher assessment, reinforcement and learning, cognitive dissonance and learning, and social control and learning as the mechanisms used for effecting change in the students. These theoretical foundations for the micro-curriculum will be explained in depth in Chapter II, Review of Literature. For the purposes of this study, learning is understood as a change in behavior.

Cognitive dissonance, understood as the difference between cognitive understanding and related behavior, is a learning process which the present study is designed to utilize. It is assumed that new behavior which is experienced as rewarding yet incongruent with the student's self image or the image others have of the student will be reinforced if the incongruent behavior is repeated and found rewarding. One aspect of theoretical significance of this study is that it will attempt to increase the cognitive dissonance for the student in the school setting as a means of effecting behavior change.

The use of a micro-curriculum format to treat affective problems is a follow-up of implications for the research section of Posner's article, "Curriculum Structure".[7] Posner uses the term "presumably has affective consequences for students and affects teacher's assessment and instructional planning". The present study is important because it focuses directly on the student's affective consequences and the effect of teacher assessment as the desired outcomes or dependent variables.

Traditionally, curriculum has focused on subject matter learning as the objective in the classroom. The theoretical significance of this study lies in the possibility of curriculum activities widening focus to include the affective needs of the specific child population in designing a program of classroom activities. Curriculum does not need to be limited to development of procedures and strategies for subject matter only. Curriculum can, as this study will demonstrate, take into consideration a wider range of funded knowledge about how humans learn and change their behavior.

While Chapter I has described the intent and scope of the present study, Chapter II develops the conceptual frameworks of the study. The Review of the Literature will trace from the developmental tasks of children and problems of hearing impaired children, a description of the problem this study has focused on for treatment. Sections 4-7 focus on various dimensions of social learning that the present study utilizes for the development of the micro-curriculum. The content of Chapter II provides the foundation for the design and direction of this study.

Chapter III develops the use of social ecology as a curriculum treatment for social immaturity in elementary age hearing impaired children. It takes what is usually considered hidden curriculum material and formalizes it into a planned curriculum of affective ecology.

Chapter IV presents the design of the field study. It includes a description of the instruments used.

Chapter V presents the results of the field study and how these results answer the two research questions.

Chapter VI summarizes the study and develops the implications which can be drawn from the results.

C H A P T E R I I

REVIEW OF THE LITERATURE

The purpose of this chapter is to provide a rationale for the study. Although the resulting base suggests that hearing impaired youth develop and implement their social interactions in varied settings, this chapter is divided to focus on two dimensions of the problems of hearing impaired elementary age children in environments of classrooms. The first focus describes the nature of the problem of social immaturity and causes of the problem. The second focus develops from social learning theory and relevant research a conceptual base from which a treatment can be designed.

This review of literature gained direction, in part, from comments by classroom teachers in schools for the hearing impaired. One comment which is frequently made by classroom teachers of the hearing impaired is that, "when you want to get academic material across to the students, it is necessary to separate them since they are visually distracted by each other and the separation enables them to focus more completely on the material." When dealing with academic material, peer activity is not encouraged by teachers. This means that many teachers of the hearing impaired believe that it is difficult for them to explore peer teaching and the peer process as a teaching-learning mechanism when dealing with "academic" material.

While these teachers use grouping, they do not expect any significant learning to take place in group settings.[8] After hearing of this problem from a number of teachers in a number of institutions for the hearing impaired, it stood to reason that if this were as serious a problem as teachers described, then it might also be manifest in other aspects of the life of the hearing impaired.

The research reviewed in this chapter is divided into seven sections. The title and purpose of each section follows:

I. Social Maturity As A Developmental Task. This section describes the specific nature and age of the development of social maturity.

II. Problems Resulting from Social Immaturity Which Hearing Impaired Adults Experience. This information provides an understanding of the impact social immaturity has on the life of the hearing impaired adult.

III. The Classroom as an Ecology. This section explores the classroom ecology in the life system of students.

IV. Ecology as A Treatment Tool. This section explores social ecology as an intervention tool for remediation of social immaturity.

V. The Dynamics of Social Learning. Treatment procedures which could be applicable for this problem are explored next. The dynamics of learning are next focused on as a means of understanding the dynamics to be involved in a treatment procedure.

VI. Social Learning Theory and Behavior Change. The next section focuses on selected learning theory regarding

behavior change. To treat social immaturity, it is necessary to understnad how people learn to change their behavior.

VII. Social Learning Reinforcement. The final section calls attention to the dynamics of reinforcement of social learning in a group. These issues are important considerations for the design of a remediation program to treat social immaturity.

SECTION I

SOCIAL MATURITY AS A DEVELOPMENTAL TASK

This section establishes social maturity as a developmental task. In so doing, it also establishes latency age (10-12 years) as the critical age for developing social maturity. This section develops the criteria for choosing latency age children for the field study.

Erik H. Erikson in his chapter "The Life Cycle: Epigenesis of Identity", has the following to say about the latency stage of development for youth.

> "This is socially a most decisive stage. Since industry involves doing things beside and with others, a first sense of division of labor and of differential opportunity--that is, a sense of the technological ethos of a culture--develops at this time. Therefore, the configurations of culture and the manipulations basic to the prevailing technology must reach meaningfully into school life, supporting in every child the feeling of confidence--that is, the free exercise of dexterity and interintelligence in the completion of serious tasks unimpaired by an infantile sense of inferiority. This is the lasting basis for co-operative participation in productive adult life."[9]

Those servicing hearing impaired youth and adults have utilized Erikson's epigenic scheme of developmental crisis when dealing with social immaturity in hearing impaired youth and adults.

Erikson is not the only psychologist to identify the latency age period with the beginning of the development of social maturity. Harry Stack-Sullivan in his chapter on Preadolescence has the following to say:

> "Because one draws so close to another, because one is newly capable of seeing oneself through the other's eyes, the preadolescent phase of personality development is especially significant in correcting autistic, fantastic ideas about oneself or others. I would like to stress--at the risk of using superlatives which sometimes get very tedious--that development of this phase of personality is of incredible importance in saving a good many rather seriously handicapped people from otherwise inevitable serious mental disorder. ...the development of capacity for interpersonal relations is by no means a matter which is completed at some point, say, in the journal era. Very far from it. And even preadolescence, which is a very, very important phase of personality development, is not the last phase. ...but in this intimate interchange in preadolescence--some preadolescents even have mutual daydreams, spend hours and hours carrying on a sort of spontaneous mythology in which both participate--in this new necessity for thinking of the other fellow as right and for being thought of as right by the other fellow, much of this uncertainty as to the real worth of the personality, and many self-deceptive skills at deceiving which exist in the juvenile era, may be rectified by the improving communication of the chums and, to a much lesser extent but nonetheless valuable, by confirmatory relations in the collaboration developed in the gain."[10]

Also, Robert J. Havighurst in his chapter, "Developmental Tasks of Middle Childhood", has the following to say about the developmental tasks and educational implications of middle childhood.

> "Nature of the task. To learn the give-and-take of social life among peers. To learn to make friends and to get along with enemies. To develop

> a social personality. ...Educational implications. School is the place where most children work out the task of learning to get along with age mates. Whether the teacher pays any attention to it or not, the child's chief concern is with this task. Often the key to understanding a child's difficulties with his school subjects, or to understand a discipline problem in class, is given by a knowledge of his difficulties in achieving this particular developmental task."[11]

Each of these scholars agree that the latency age, or preadolescent age, is a time when social maturity is developed. Thus, if a critical age is to be identified for concentrating remediation of social immaturity, the latency period is appropriate. The energies of the youth are then more receptive than earlier, and later would present an already established behavior pattern to modify.

SECTION II

PROBLEMS RESULTING FROM SOCIAL IMMATURITY WHICH HEARING IMPAIRED ADULTS EXPERIENCE

This section examines, from a variety of sources, problems the hearing impaired adult experiences as a consequence of social immaturity. This material establishes the importance of social immaturity as a target for treatment.

The summary of one session of a workshop on rehabilitation case work standards for the deaf at St. Louis, Missouri in 1966 states 'The deaf client gets far less social interchange in relation to personal living than hearing persons."[12] This conclusion is cited as the basis for making an assumption about the nature of social interchange with deaf adults since there is such little research available. In

the same summary, in a section focusing on provision of services for the deaf, the above author states that a major portion of counseling with the deaf is focused on personal and social adjustment problems. This is one of the most drastic needs when preparing a client for a job in the hearing world. The point is that the realm of getting along with other people and a general lack of ease in working with others is what makes job placement a serious problem for the deaf.

In 1970, at the proceedings of the national forum--Legal Rights of the Deaf in Chicago, it was affirmed that the deaf do not make use of all the social services available to them.

> "The deaf are sometimes reluctant to look to agencies when they need help with legal problems, credit difficulties, marriage counseling, vocational counseling, etc. ...deaf people tend not to trust the established (hearing) agencies. Instead they trust their own 'grapevine'; they look to their own leaders."[13]

This is an extension of what teachers in schools for the hearing impaired observe, that the hearing impaired work in isolation and do not, or are not able to avail themselves of the resources of their hearing peers when legally available.

In the report of the proceedings of the 43rd meeting of the Convention of the American Instructors of the Deaf in 1967, the following statement is made by an instructor of the deaf from Kent, England.

> "The missioners and welfare workers are very concerned at the extreme social inadequacy of so many of our former pupils. Our inadequacies will probably vary from yours in some instances, but obviously they exist on both sides of the Atlantic since studies with deaf children using the Coll social maturity scale showed that on an average these children were retarded by about fifteen to twenty percent compared with hearing children. A similar retardation was

> noted by the research team headed by Dr. Rodda, using the Bristol Social Adjustment Guides."[14]

The report goes on to chronicle examples of social immaturity. Another writer, dealing withparent-teacher relationships and their psychological implications, emphasizes the role which parents and teachers play in the development of self-image for the deaf child.

> "Generally the attitudes of many persons in contemporary society including college and university admissions personnel and parents of deaf children, tend to be undesirable for the full education of the deaf. These attitudes complicate the psychosocial adjustment process of deaf persons."[15]

Dr. McCay Vernon describes the extremes to which social maladjustment can carry deaf adults.

> "Those of us who have visited large numbers of hospitals for the mentally ill or mentally retarded and seen case after case of deaf persons misdiagnosed, 'schizophrenic, chronic, undifferentiated with mental retardation', find it a tragic fact of life."[16]

John D. Rainer elaborates further on this aspect of deafness. "There are many forms of social maladjustment, including cases of poorly structured anti-social behavior, and certain forms of impulsive, unruly, and often bizarre behavior."[17] He further adds, however, that drug addiction and alcoholism, while present among the deaf, have a lower frequency than depression and more structured forms of neurosis among the hearing population. Schizophrenia is diagnosed with similar frequency as among the hearing population, with the added problem that it is difficult to establish these symptoms due to the unfamiliarity of the person making the diagnosis with the language patterns of the deaf.

Sidney N. Hurwitz in The Contribution of Social Work Practice to the Mental Health of the Hearing Impaired further

elaborates the dimensions of this problem as seen by the social worker.

> "The major impairment they suffer in common is one of retarded personality development; this impairment rather than deafness per se, or low academic function per se, or other handicaps, blocks their continued growth and progress. ...a major conclusion of our studies is that these clients, regardless of what combination of other handicaps they possess, are most impaired by their problems of psycho-social functioning. They are armed poorly, with infantile and childish techniques, for adapting to an adult world."[18]

William J. McClure elaborates on the problem in the school setting:

> "--the term 'marginality', generally referred to in literature on race and nationality relations to describe the individual who belongs to two cultural worlds. Not being fully part of either world, the person is comfortable in neither. He is on the edge both socially and psychologically. This aptly describes the plight of many deaf children who are told again and again that they can adjust and fit well into the world of the hearing. When this does not develop as expected, they can become frustrated and confused, and sometimes they withdraw from both groups. ...Studies (show) that profoundly deaf youngsters tend to make better school adjustments than hard of hearing, and that the adjustment levels are not too different from those of a controlled group of hearing adolescents."[19]

Further on, in Mental Health and the Deaf: Approaches and Prospects in a discussion session on Psychology, McClure discusses the types of problems which are seen among deaf children: (1) lessened expectations by parents; (2) isolation and withdrawal; (3) the development of paranoid ideas by the deaf; (4) parental vacuum leaving the children without any strong ties with their parents; (5) an institutionalized personality evidenced by dependency, immaturity, and lowered motivational levels. Each of these problems either contributes to or is the result of social immaturity.

In New Orleans in 1965, the proceedings of the National Research Conference on the Behavioral Aspects of the Deaf produced further documentation of this aspect of the problem of deafness. Marvin B. Sussman in his presentation Sociological Theory in Deafness Problems and Prospects, elaborated on the problem of marginality.

> "Since deafness is, for the most part, an invisible handicap, the initial condition of marginality is more a function of the deaf person's conception of himself than it is a function of the stereotyping imposed upon the individual by normal individuals of the society. ...marginality is more apt to be a condition of those who become deaf later in life than those who experience early total deafness. Baroff (1963) has concluded that 'persons with early total deafness can establish adequate socialization patterns and are able to participate and utilize general community services'. ...the marginal person grows much more comfortable if he succeeds in establishing an identity finally within one of the worlds between which he vacillates."[20]

Frank B. Withrow in his article, Current Studies of Personal Adjustment of Deaf People, elaborates further on personal isolation experienced by deaf people. He cites Myklebust who in 1960 used the Minnesota Mulithasic Personality Inventory to study a group of deaf adults. On this inventory, it was found that the deaf population shows a tendency towards schizophrenia. He recommended caution in the interpretation of these results, suggesting that they did not necessarily mean that the deaf are schizophrenic, but that as compared to the hearing they feel detached and isolated from other people. This might be a natural consequence of deafness, and not an indication of mental illness.

> "...even under the best circumstances, deafness tends to limit the social interaction of the individual. ...this isolation is evident as

> soon as the deaf child enters his own family group. His failure to develop normal means of communication immediately tends to separate him from his own family."[21]

Withrow goes on to document that the hard of hearing as opposed to the profoundly deaf suffer more severe consequences of isolation and alienation from both the hearing population and the deaf population. The effects of this isolation are felt most severely by the deaf when it comes to vocational adjustment.

William Gellman in his article Vocational Adjustment and Guidance of Deaf People, points out that as a youth, deaf persons shape and develop a work personality which facilitates productive activities. He links this phase with Erikson's stage of industry versus inferiority. At this point the youth sees himself as being able to achieve and to work with others. Gellman cites research relating to this phase of development.

> "persons with good current job adjustment came from closely knit and strongly unified families, had parents who provided 'healthier' models for dealing with life, had greater affection from their fathers, and had experienced greater early success in achieving independence. The more poorly adjusted in current employment had exhibited greater antagonism towards their parents, were more involved in sibling rivalry, and had greater feelings of ambivalence towards their early homes. The latter description parallels characterizations of families which cannot accept deaf children."[22]

Gellman also suggests that job adjustment requires that the individual develop abilities to cope with networks of social relationships that are basic in organized work settings. A worker must be able to be aware of and adjust to the customs and norms of the work group and maintain acceptable interpersonal relationships with those with whom he comes in contact, his co-workers and supervisors. This is a diffi-

cult task for those who are deaf. Gellman cites the following as goals for improving employability with deaf children.

> "...employability begins with inculcating middle class values in school and workshop programs. These values include delaying gratification, working for distant goals and viewing adults as sources of information, approval, ideas and rewards. Concurrently, situational techniques and workshop programs serve to provide experience with problems met in job seeking and job maintenance."[23]

Dr. Homer D. Babbidge in, The Report of the Advisory Committee on the Education of the Deaf, cites data that indicate the nature of the occupational conditions among the deaf. More than twice the percentage of deaf persons are craftsmen, foremen, operators, etc., than is the case with the general U. S. population. It is also pointed out that 17.0% are in white collar jobs and 83.0% in manual jobs as opposed to the total population figures of 46.8% in white collar and 53.2% in manual jobs. These figures were developed with a bias that if corrected would indicate a higher disparity between the normal population and the deaf population in the United States.[24]

Hilde S. Schlesinger and Kathryn P. Meadow in their article Development of Maturity in Deaf Children, cite the work of Levine (1956), Mykelbust (1960), and Altshuler (1964) to lend data to the generalization that the psychological development of deaf individuals seems to exhibit a high degree of emotional immaturity. Levine describes egocentricity, easy irritability, impulsiveness, and suggestibility; Mykelbust describes immaturity as immature in caring for others; Altshuler describes immaturity as egocentricity, lack of empathy, gross cohesive dependency, impulsivity, and the absence

of thoughtful introspection. Working from this, Schlesinger and Meadow conducted the research which demonstrated that social immaturity in deaf students was not an inherent condition of deafness, but rather was the result of residential schooling or parental difficulties in dealing with deafness. Those students who were raised by deaf parents did not exhibit the same degree of social immaturity as those students whose parents were hearing parents or those students who were raised in institutional or residential schools. "The authors contended that the research findings and independent observations which characterized deaf individuals as immature are not a necessary consequence of auditory deprivation."[25] The authors, working from Erikson, identify the years six through eleven as critical years for the development of the sense of industry and a feeling of competence. They identify the critical criteria for successfully negotiating this period in a child's life when impaired by deafness as being the social environment surrounding the child.

It was suggested at the onset that, with teachers of the hearing impaired, a common complaint is that deaf students are not able to work in groups because groups distract their attention and it is difficult if not impossible for any academic work to be accomplished in that format. However, the research has identified that it is the social climate around the student which is a determining criteria for social immaturity.

David Spidal and Vivian Sheridan in their article, The Child in the Process: Affecting His Potential Through Life, go on to state that:

> "It is the peer group that furnishes the best opportunity for the child of developing the requirement of living with his fellow man, not only now, but more importantly, in the future. ...if the peer group plays an important role in the affective aspect of the hearingchild's experiences, then certainly it is an even more necessary aspect of the deaf child's experiences. Schools must give more attention to this process."[26]

The authors go on to emphasize the potency of models for the development of social behavior. This being the case, it is important for the children to have exposure to desirable models of peer behavior.

The above literature focuses on social immaturity of deaf students. This social immaturity begins from the onset of deafness (from birth or whenever deafness occurs) and is compounded in the development of mental process by the nature of the social environment in which the child finds himself. The problems resulting from social immaturity range from employment problems to misdiagnosis of psychiatric problems. It has been established that social immaturity is not only a condition of deafness but is a condition brought on by the social environment's reaction to deafness. The situation which initiated this investigation, the claim by teachers of the deaf that the students are unable to work when doing academic work and must therefore be separated, is also a manifestation of the environment's problems in dealing with the deaf, which reinforces the problem of social immaturity. The impact on the life of a hearing impaired adult is of such magnitude that this problem of social immaturity is a critical issue in the education of the hearing impaired.

SECTION III

THE CLASSROOM AS AN ECOLOGY

This section examines relevant works that help to develop an understanding of the classroom as a social ecology. Webster defines ecology as "the mutual relations between organisms and their environments."[27] The classroom is a set of relationships between the children and the human and physical environments present. This ecology produces different effects as a result of the differences in the quality and quantity of relationships. The work reviewed in this section focuses on a portion of the classroom environment (ecology) in which the hearing impaired child develops; the classroom. Recently, there has been work focused on the classroom ecology as a curriculum which is unplanned and unstudied. This section develops the idea of classroom ecology as a curriculum. This is important for the field study as one way to deal with social immaturity in hearing impaired elementary age children because it is this unstudied, unplanned curriculum which reinforces social immaturity.

Philip Jackson documents the problem of time and wasted time as an unintended consequence of many activities in the classroom. He ends his work with a plea for observational studies of what is taking place in classrooms.[28] Lawrence Kohlberg comments:

> "We believe what matters in the hidden curriculum is the moral character and ideology of the teachers and principal as these are translated into a working

> social atmosphere which influences that atmosphere of the children. ...the transformation of the hidden curriculum into a moral atmosphere is not a matter of one or another educational technique or ideology or means, but a matter of the moral energy of the educator, of his communicative belief that his school or classroom has a human purpose. To get his message across, he may use permissiveness or he may use discipline, but the effective moral educator has a believable human message."[29]

Robert Rosenthal in his article Teacher Expectation and Pupil Learning, in summarizing behavioral research on the self-fulfilling prophecy says:

> "If the experimentor were indeed learning to increase the unintended influence of his prophecy, who would be the teacher? Probably the subject. It seems reasonable to think of a subject's responding in the direction of the experimentor's hypothesis as a reinforcing event. Therefore, whatever the covert communicative behavior of the experimentor that preceeded the subject's reinforcement, it will be more likely to reoccur. Subjects, then, may quite unintentionally shape the experimentor's unintended communicative behavior. Not only does the experiment influence its subjects to respond in the expected manner, but his subjects may well evoke just that unintended behavior that will lead them to respond increasingly as prophesized. Probably neither subject or experimentor 'knows' just exactly what the unintended communication behavior is--and neither do we. ...from the results it would seem that when children who are expected to grow intellectually do so, they are considerably benefited in other ways as well. When children who are not especially expected to develop intellectually do so, they seem either to show accompanying undesirable behavior or at least one perceived by their teachers as showing such undesirable behavior. If a child is to show intellectual gain, it seems to be better for his real or perceived intellectual vitality and for his real or perceived mental health if his teacher has been expecting him to grow intellectually."[30]

Bruce Joyce in his article The Future Curriculum Worker, states that there is a need for techniques of developing and evaluating environments in terms of their presumed functions. "We need, in other words, to learn how to embody

a good range of educational missions and means in the institutional clothing needed to make them useful and acceptable."[31]

Those in the field of education research and curriculum development are beginning to turn their focus on the resulting effects of the classroom ecology. This is an acknowledgement that subject matter is not the only valid concern for the curriculum developer.

SECTION IV

ECOLOGY AS A TREATMENT TOOL

This section examines ways in which a social ecological structure could be used as a treatment tool. The material cited ranges from institutional therapeutic settings to classrooms and family therapy. This material is relevant because therapy is a process of relearning behavior patterns. Social maturity is a behavior pattern. This material is important for the field study because it establishes the use of social ecology as a means of treating counter productive (for the individual) behavior.

Ego and Milieu focuses on environmental therapy. John and elaine Cummings working from Erikson, state that:

> "Ego defusion is experienced unpleasantly as a disjunction between self and society. As a person interacting with the environment modifies it and is modified by it, a certain amount of harmony is experienced with the interpersonal and cultural situation."[32]

This is an introductory statement by way of establishing the influence of environment and milieu on the

individual. They go on to describe milieu as having no clear boundaries, and not being clearly comprehended. We have very little background literature on the milieus from which patients and therapeutic situations have come even though there is immense literature about the patients themselves.

> "We assume, and our therapy is based upon this assumption, that the appearance and the course of these disorders are associated in important, if poorly understood, ways with conditions of systems' social interaction--more particularly such influential systems as the family, the school, and the working group. ...nevertheless, some studies have thrown indirect light upon the community's therapeutic potential. For example, the limiting suggests that most milieus offer support and challenge sufficient for ego restoration. ...creating a therapeutic milieu in the community is like participating in a Judo match: forces that cannot be altered are used for a new purpose. ...milieu therapy sets out to make social changes and trusts that ego growth will ensue."[33]

John and Elaine Cummings have put the hidden curriculum or unstudied curriculum to work in a therapeutic format.

Vincent R. Snider looks at the hidden curriculum in another setting, and says all students in high school and college ask:

> "What are the actual hurdles one must jump? How important is the style or form, or is it enough simply to get over the hurdle? What is the generally accepted academic and social behavior within the university, and how is this reflected in the form of rules and the exquisite prescriptions? The answers to these and many similar questions form the service of the hidden curriculum. For most students, it is more important than the visible curriculum during their freshman year."[34]

Again, Snider is pointing out to us that the process at work in the classroom that can determine the outcome for those utilizing it as a resource. Although we as yet know

little about the specific dynamics of the process of the hidden curriculum, or the unstated curriculum, we do know that the phenomenon does exist. This being the case then, it would follow that the classrooms for the hearing impaired impact for good or ill. The data supplied those working with the hearing impaired suggest that for the preadolescent going through the developmental period of social maturity, the classroom, as well as his home has a tendency to set in operation disfunctional behavior patterns.

In his article Families, Change, and the Ecological Prospective, E. Auerswald, while discussing issues of family therapy, introduces the concept of ecology.

> "Ecology has been defined by many as the science of survival. I believe we could further define it as the study of beginnings and endings in the dynamic and changing balance of the universe. For the life sciences, then, a derivative definition might be the study of life and death in time and space. Throughout this chapter, I will be using this latter definition. ...media ecology is a growing field, especially since closed circuit and cable television feedback networks have appeared on the scene with the promise that they will provide one means among others of creating change in the life view of individuals and groups. In essence, this group aims at creating ecologists, or at least people who think in terms of the universal ecological balance. ...the rate of change in a social system varies markedly from system to system. Within a given social system, an individual functions most efficiently as a sub-system when his operations, including his social behavior and thinking, are synchronous with the operations of that system. The alternative state to synchrony is a state of achrony. Achrony is when change occurs in an individual, as sub-system changes at a faster rate than the system he inhabits, he is in relation to it, ahead of it, or in a state of metachrony. Epichrony is a state in which one escapes above time into transcendental thinking, and catachrony is a state in which one is weighted down by time, trapped beneath time and unable to cope with it."[35]

Within this paradigm, the subjects of this study, preadolescent, hearing impaired youth, are in a state of achrony in their ecology. Their ecological networks include their families and their schools. Since it has been established that their social immaturity is not a result of their hearing deprivation, it then seems useful to work within the social systems within which they as a sub-system have become in a state of achrony.

In order to understand the causal determinates of this state of achrony for preadolescent hearing impaired children, it is useful to think in terms of social systems and the individual as being a sub-system within a social system. This then allows us to look at some of the cause and effect relationships and dynamics at work within social systems. A large body of data is developing regarding the cause and effects relationships and dynamics of these relationships in social systems. The diversity of this data is impressive.

Robert Sommer after documenting the differential effects of seating arrangements in a classroom went on to make the following statement.

> "From a practical standpoint, knowledge of how groups arrange themselves can assist in fostering or discouraging relationships. A library that is intended to be sociofugal space, where interaction is discouraged, requires knowledge of how to arrange people to minimize unwanted contact. ...to an increasing extent we find ourselves being arranged by impersonal environments in lecture halls, airports, waiting rooms, and lobbies. Many aspects of the approximate environment have been placed for ease of maintainance and efficient cleaning with little cognizance given to their social functions. ...the study of small group ecology is important, not only from the standpoint of developing an adequate feeling of human society that takes into account the context of social relationships, but also from the

practical standpoint of designing and maintaining functional spaces where human relationships can develop."[36]

Sommer's work suggests to us that the way people are arranged for tasks will promote or inhibit social interaction patterns. When teachers say that they need to isolate hearing impaired students so that they can concentrate more effectively on their "academic" work they may in reality be utilizing a strategy which has a deleterious effect on the social isolation which the students have experienced in a multiplicity of other settings.

If the classroom ecology can be used to reinforce negative outcomes, it can also be used to set in motion and reinforce positive outcomes.

SECTION V

THE DYNAMICS OF SOCIAL LEARNING

This section examines the phenomenon of the self-fulfilling prophecy as a component of social ecology. This is an important aspect of the social ecology of the hearing impaired elementary age child. If treatment of social immaturity is to take place, then the self-fulfilling prophecy dynamic must be understood and manipulated to work for social maturity rather than against it.

Martin E. P. Seligman in his tape Learned Helplessness documents that in research on helplessness, utilizing dogs as samples:

> "It is possible to demonstrate that helplessness can be learned. Research with laboratory animals suggested to Seligman that helplessness is a learned response and that it can be unlearned. In relating his work to cases of human depression, with a non-physiological etiology, he describes depression as a learned response, an example of learned helplessness."[37]

In the latter part of this tape Martin Seligman describes treatment procedures which in the process ends up serving the needs of the therapist rather than the needs of the client. For example, in a case of an autistic child, self-abusive behavior increased with increased demonstrations of love and caring. When electric shock was administered to the child, the self-abuse rate diminished. The tendency on the part of the therapist was to administer love and affection and to refrain from utilizing the electric shock, when in fact the electric shock turned out to be more effective in treating the problem. This then raises the question as to whether or not protective controlling actions of parents and teachers of the hearing impaired are not in reality serving more the needs of the parents and teachers than the needs of the children.

An example of another dimension of the dynamics operative in social systems was dramatically illustrated by David Rosenhand in his Odyssey Into Lunacy. This work is a description of David Rosenhand's research on the quality of treatment in mental hospitals. He and nine others were admitted with bogus symptoms to a number of psychiatric hospitals. In no case did they admit themselves with real symptoms of real psychosis. In each case the admitting doctors developed from normal case histories a diagnosis of psychosis.

The point of the study was to determine how long it would take to realize that the patient was normal. The answer was that they never did. In most situations it was the patients that recognized their normalcy rather than the staff. The staff expected them to be abnormal and therefore treated them as abnormal, interpreting all of the behavior as abnormal behavior rather than normal behavior.[38]

David Rosenhand's experience is better understood in the context of Robert Rosenthal's work on what is called "the expectancy effect". Robert Rosenthal has developed a four factor theory of expectancy mediation. In developing this theory, he cites 285 research studies, 80 of which deal directly with classroom or institutional settings as a basis for the theory. Rosenthal's four factor theory of expectancy mediation includes: (1) the general overall climate of warmth for high expectancy individuals; (2) differential praise response for high expectancy individuals; (3) the teacher input factor (higher input for higher expectancy students); (4) the output factor, or the amount of response opportunity provided for the high expectancy student.[39] The student who is expected to have a greater potential is treated with more warnth, given differential quality and quantity of praise, provided more input, and provided more opportunity to give output than is the student that has a low expectancy of ability. When in fact the student with a lower expectancy of ability does produce higher quality than expected, he is responded to as if his unexpected output is of little value,

or is not his own, or not welcomed because he is not behaving as expected.

In other words, what was happening to David Rosenhand and his associates as they checked themselves into mental institutions was that the doctors and staff of those hospitals were expecting the researchers to be psychotic, and therefore translated all of their actions and behavior into psychotic terms.

Research on the expectancy effect has been carried into non-educational settings, the industrial world, and animal research.[40] The self-fulfilling prophecy dynamic is operative behaviorally both with animals and humans in a variety of settings. Thus, when parents and teachers anticipate that hearing impaired students will have difficulty in communicating with peers and with "normal" people and that they will have problems in socializing, this very expectancy may become a self-fulfilling prophecy. If we are to treat this problem a new expectancy will need to be established.

SECTION VI

LEARNING THEORY AND BEHAVIOR CHANGE

This section reviews social learning theory focusing on cognitive dissonance as the theory which is most useful, though not conclusive, for affecting behavior change. This is crucial for the field study. To treat social immaturity, it is important to be clear on what learning theory is to be

used in order to develop a clear strategy for teaching. Walter Mischel utilizing the work of Kohlberg, makes the following statement:

> "In the cognitive-developmental view proposed by Kohlberg, once the boy has steadily categorized himself as male, he then values positively those objects and acts consistent with his gender identity. According to the present view, a child's behavior and values are determined not by his gender role, but by his social-learning history. Moreover, there is little current evidence that cognitive changes in opinions, beliefs, or values produce behavior changes. On the contrary, there is considerable evidence that cognitive and value changes occur as a result of a particular behavioral performance. That is, values and cognitions are realigned to make them consistent with behavior, and may even be used to justify behavior."[41]

In his development of that chapter, he makes liberal use of the work of Festinger and Brehn and Cohen on Cognitive Dissonance. In "Studies of the Effects of Cognitive or Attitudinal Changes Upon Subsequent Behavioral Changes", Festinger pointed out in his review of the literature that there is surprisingly little evidence that alterations in attitudes or beliefs produce changes in relevant behavior. Rather, there are data suggesting that cognitive and value changes may follow after new behaviors have been performed rather than being a prerequisite for the new action.[42]

While it is true that there is little support for the concept that cognitive changes preceed behavior changes, Barry McLaughlin in his chapter Attitude Change points out that the work of the cognitive dissonance theorists and the learning theorists has not yet been satisfactorily resolved experimentally. He goes on to focus the problem of learning theory to be the use of the concept of reinforcement.

> "A researcher can opt for a merely operational use of the concept of reinforcement. According to this definition, any thing that increases the probability of a response is reinforcing. ...should we think of these various procedures as actually reinforcing behavior or simply as operating in a manner analogous to reinforcement? ...lacking agreement on this point it seems likely that researchers with a learning theory orientation will continue to use what works, leaving larger theoretical concerns in abeyance. ...if, for example, one assumes that there is a learned drive for consistency and that consonant communications are rewarding to the subject and dissonant communications are punishing, learned theory begins to merge with dissonance theory."[43]

However, he further goes on to suggest that learning theorists and cognitive dissonance theorists are working from different paradigm's and that at present there is no satisfactory integration of the two theories.

For the purpose of the present study the design of the micro-curriculum will focus on the initial process of behavior change, the modification of a behavior pattern. This current study will not treat the issues of how, once the change is made, do you maintain the new behavior. The assumption is on the side of those who say change the behavior and the individual will in time integrate the modification with his life cycle.

SECTION VII

SOCIAL LEARNING REINFORCEMENT

This section explores social learning reinforcement conditions which have been shown to yield a high learning carryover. These reinforcements will not be a part of this study, but are to be seen as a recommended way of following up for further study.

The following material is not presented as a theoretical construct supporting reinforcement but rather it is presented as characteristics that have been identified as yielding high learning carryover. This material is drawn mainly from a longitudal study of learning carryover in encounter groups and encounter type group programs.[44] The intent of presenting this material is not in support of the theoretical construct but in support of follow-up design decisions for the curriculum. The following is presented as criteria categories of groups that have a high yield of learning carryover.

1. Cohesiveness of the group in the last half of the group life is characteristic of groups that have high learning yields. Groups that attain cohesiveness early sometimes lose cohesiveness toward the end. It is more important that cohesiveness be experienced toward the end than at the beginning.
2. The intensity of the involvement of participants is a characteristic of groups that have high learning yields. As with cohesiveness, it is important that the involvement intensity be in the latter part of the program rather than at the beginning. Sometimes groups have high intensity in the beginning and low intensity at the end. It is more important for the intensity of involvement to be at the end rather than the beginning.
3. Harmony within the group is a characteristic of high yield groups. It is important that

within the group life there not be a lot of descension and disruption, but rather that a high level of harmony be maintained within the group life.

4. Groups that use large chunks of continuous time rather than small chunks of sporadic time have a higher learning yield.
5. Peer control of the group is a characteristic of high yield groups.
6. Groups that have high yield in learning carry-over have demonstrated that individuals within the group see the group as a family and can learn from each other more effectively when they see each other in this light.
7. The leader and the leaders within the training group serve as learning models for the rest of the trainees. It is therefore important that the leader be compulsive about insuring his actions and activity be congruent with the cognitive material that the program is presenting. It is also imperative that the leader reproduce and model the behavior that is trying to be established for the group.

The following activities generally take place after the group has finished its work. These activities if operationalized will be supportive of high learning carryover in the individuals and enable maintainance of behavior change.

8. People maintain change when they experiment with a new behavior.
9. People maintain change when they utilize the material they have learned in the group in natural occurrences in their daily living.
10. People maintain change more effectively when they are able to talk with others about the change.
11. Change is maintained when people get support from others.
12. Change is maintained when people are able to generate self-reinforcement. Self-reinforcement comes when people feel good about doing the new behaviors.
13. Reinforcement from the peer group is important for learning curriculum and change to last.
14. It is important for the trainee to analyze and think about the behavior and the change that has taken place. In other words, cognitive reflection on the change behavior is imperative in maintaining the change.

Profiles of leaders whose groups have high learning yield shows that leaders behave in the following ways.

15. Leaders give high support to membership in the group.
16. Leaders impose moderate structure on the group.
17. Leaders generate low levels of emotional stimulation.

18. The leader performs what is called executive functions for the group, that is that the leader call time, start activities, see that things take place and generally be the executive leader for the group.
19. The leader is group oriented rather than self-oriented.
20. The leader places emphasis on personal mastery of the skills and behaviors being learned.

These characteristics of high yield for group experiences are utilized in the designing and implementation of the curriculum.

SUMMARY

This chapter has developed the social maturity as a developmental task of the latency age (10-12) child. Then social maturity was established as a source of problems for the hearing impaired adult. The classroom as a social ecology, which becomes an unplanned curriculum, was developed. From this, it was then established that a social ecology can be used as a treatment tool for behavior change. Then the self-fulfilling prophecy was identified as one component of social ecology. Cognitive dissonance was then identified as a relevant learning theory for changing behavior. The chapter concludes by identifying relevant reinforcement procedures to enhance learning carryover for behavior change.

The material focused on in this chapter is used to give shape to the design for a teaching strategy in the field study. It identifies the problem to be treated; the appropriate age grouping for treatment intervention; it identifies the treatment tool (social ecology); it identifies the appropriate dimension of the social ecology, the self-fulfilling prophecy; it identifies the appropriate social learning theory to be used (cognitive dissonance); and ends by focusing on appropriate reinforcement procedures. Each of the above is used in shaping and executing the field study.

Chapter III explains the design and content of the micro-curriculum. The design and content are shaped from the research presented in Chapter II. Chapter III develops the treatment procedure for social immaturity to be used with elementary age hearing impaired children as a curriculum of social ecology to be used in a classroom for the field study.

C H A P T E R I I I

A MICRO-CURRICULUM OF AFFECTIVE ECOLOGY FOR THE HEARING IMPAIRED

The present study uses as its independent variable a micro-curriculum designed to increase cooperative interaction among selected hearing impaired elementary school age children. This chapter advances the objectives and explains the two major learning opportunities that make up the curriculum for the selected students. Further complementing curriculum for the designated teacher is described. This curriculum is designed to increase the teacher's attention toward collaborative student behaviors. The objectives and learning opportunities for the teacher curriculum are also presented. The chapter is organized in the following manner. First, the chapter explains how the curriculum is related to the research questions. Second, the curriculum for the students is described. Third, the curriculum for the teacher is described. Finally, the way both curricula were implemented is explained.

THE STUDENT CURRICULUM

This section will present the student curriculum by explaining what is to be used as learning opportunities and how they relate to the research questions. Also, the objectives

for students for each learning opportunity will be presented. The learning opportunities are designed to answer the research question; "does the micro-curriculum modify observations of the childrens' interaction patterns?" The objective of the micro-curriculum is for students to increase their patterns of interacting with each other in their classroom. The success or failure of this will be determined by observations of a participant observer other than the teacher. The curriculum utilizes tasks requiring the entire class to work together for their successful completion. The curriculum assumes from the literature that such collaborative working together behavior is appropriate for preadolescent students.

The choice of specific learning opportunities went through several steps. The first was to determine the relationship of the learning opportunities to the research question. With this in mind, it was determined that the learning opportunities could perform a function of allowing the experimental group to be its own control.[45] This then dictated that the initial and final learning opportunities needed to be essentially the same for observation purposes. Also, the learning opportunities needed to perform the function of giving the students experience with working together behaviors. That meant that all students must be able to have equal access to the experience and be required to experience working together. The classic exercise of the National Training Laboratories, the tower building exercise, was chosen. For the purposes of this study, it was modified to be the building of a bridge and a missile. This was chosen because it required

all to equally participate and work together on a common task. A second Natural Training Laboratories exercise, the cooperation game, was chosen because it has become a classic learning opportunity for improving cooperative behavior in groups.

The next step was the sequencing of each learning opportunity to maximize its focus on increasing working together behaviors. Because the student population of the study was hearing impaired, it was essential to modify the classic exercises in ways which reduced their dependence on the linquistic ability. Thus, an arm band sequence and feeling and relationship matrix discs were developed. The feeling and relationship matrix discs were an adaptation of the feel wheel instrument presented in Psychology Today.[46] The arm bands and the discs allowed the students to identify quickly feelings of self and self in relation to the group and working together. They provided mechanism for affective communication which was not limited to a dependence on verbal or manual communication.

The final step was to pilot test the sequencing of the learning opportunities. The pilot test was conducted for the purpose of evaluating the sequencing of each learning opportunity and the observational procedures when used with hearing impaired students.[47] The pilot test was conducted with two classes of preadolescent hearing impaired children at The Amoskeag School in Manchester, New Hampshire.

The result of the above steps are the objectives and the learning opportunities that follow:

SEQUENCE OF THE BRIDGE AND MISSILE BUILDING
OBJECTIVES AND LEARNING OPPORTUNITIES

Objective	Learning Opportunity
To state helping as a pleasant experience.	Each student putting an arm band on someone else and explaining how it feels to help and be helped.
To work together as a group to complete a specific task.	All students working together using a set of given materials create and build of their own design a bridge or missile (specific instructions to be given regarding which to build).
To state helping as a pleasant experience.	Each student takes an arm band off someone else and explains how it feels to help and be helped.
To state how it felt to work together.	Each student tells the group who helped him and who he helped and how he felt during the building activity.
The Cooperation Game	
To establish how to play the game.	The facilitator explained the rules of the game and checked on any questions of procedure.
To experience cooperation as the only way to finish the game.	Five students played the cooperation game.

Objective	Learning Opportunity
To state that cooperation was the only way to succeed.	The remainder of the students discuss what they observed on how it was possible to complete the game.

The learning opportunities were repeated at set intervals to reinforce students' learning to work together.

THE TEACHER CURRICULUM

This section will present the teacher curriculum by explaining what is to be used as learning opportunities and how they relate to the research questions. The objectives for the teacher and how the teacher objectives and learning opportunities relate to students will be also presented.

The learning opportunities are designed to answer the research question; "are the childrens' interaction patterns modified enough to change the teacher's assessment of their patterns of working together?" The objective of the micro-curriculum is to increase students' interaction behavior. As the student curriculum is taking place, the teacher curriculum will also take place. The objective of the teacher curriculum is to get the teacher to observe student interaction behaviors.

The review of the literature developed the expectancy affect. Teachers of the hearing impaired expect their students to be unable to work together on a meaningful task for more than a new minutes. If hearing impaired students are to increase their working together behaviors, they must have the

opportunity to develop those behavior patterns. It is important for the teacher to expect and observe students' working together behaviors in order that those behaviors might be reinforced. For these reasons, the teacher curriculum is scheduled to take place concurrently with the students curriculum. The objective of the teachers observing the students' interaction behaviors is to increase the teachers assessment of the students ability to work together. The assumption is that, then the teacher will become more active in reinforcing student working together behavior.

To develop a teacher curriculum which would increase attention to student interaction behaviors required the development of learning opportunities for doing so. For this reason, the teacher learning opportunities take place at the same time as the student learning opportunities.

The following are the objectives and learning opportunities for the teacher:

OBJECTIVES AND SEQUENCE OF THE TEACHER LEARNING OPPORTUNITIES

Objective	Learning Opportunities
To state student working together behavior patterns.	The teacher fills out a teacher assessment inventory evaluating the students' working together behavior.
To attend to the working together behaviors of the students.	The teacher is asked to use an observation guide for observing the student learning opportunities.

Objective	Learning Opportunity
To state student working together behavior patterns observed.	The teacher fills out a post student learning opportunity teacher assessment inventory.
To be confronted with the discrepancy between what was expected and what was observed and recorded on the teacher assessment inventory.	The teacher and the researcher meet and look at the difference between the pre- and post-teacher assessment inventories.

The teacher learning opportunities were repeated each time a student learning opportunity took place in order to reinforce teacher observation patterns.

LEARNING OPPORTUNITY IMPLEMENTATION

The outcome toward which both the student and teacher curricula are directed is the reduction of student behavior in the classroom which reinforces social immaturity. In order that both curricula have maximum effect, it was decided that both should take place simultaneously. It would be possible to use each in isolation from the other. But to maximize the intervention, both curricula are used together to work on the total social ecology of the classroom. If only the student curriculum were used, the social ecology would still continue with teacher expectations that would be a reinforcement of the not working together behaviors and be an ongoing block against the objectives of the student curriculum. To develop a curriculum to treat the social ecology of classrooms

and not treat the total ecological make-up is as if only half the task were done. For the problem of social immaturity, this would be the case.

Having decided that both curricula would be administered jointly, the next issue was how should they be sequenced together? For the purposes of gathering data to answer the two research questions, considerations with pre- and post- data sequencing were used. Because the prime objective of increasing childrens' working together behavior patterns is a behavior training issue, a builtin process of developing the desired behavior model, and, positively reinforcing the use the model also influences the sequencing. With these considerations in mind, the sequence of the learning opportunities with objectives are presented next.

STUDENT AND TEACHER CURRICULUM
SEQUENCE OF IMPLEMENTATION

Objective	Learning Opportunity
To generate pre-test data for question two.	The teacher fills out a teacher assessment inventory.
To develop the behavior model.	The students put on arm bands.
To develop the behavior model of observing student working together behavior.	The teacher is asked to use an observation guide for observing the students.
To generate pre-test data to answer question one. To develop the behavior model.	The students work on the bridge building project.

Objective	Learning Opportunity
To reinforce the behavior model.	Students take off arm bands.
To reinforce the behavior model.	Students talk about the helping during the project.
To develop the behavior model.	The students are given the rules of the cooperation game.
To reinforce the observation behavior.	The teacher is asked to use an observation schedule.
To develop and reinforce the behavior model.	The students play the cooperation game.
To reinforce the behavior model.	The students discuss observations of the game.
To reinforce the observation behavior.	The teacher is asked to use an observation schedule.
To reinforce the behavior model.	The students put on arm bands.
To reinforce the behavior model.	The students work on a second bridge building project.
To reinforce the behavior model.	The students take off the arm bands.
To reinforce the behavior model.	The students talk about the helping during the project.
To establish the behavior model to be observed and to reinforce the observing behaviors.	The teacher and the researcher meet and confront the differences on the teacher assessment inventory.

Objective	Learning Opportunity
To reinforce the observing behaviors.	The teacher is asked to use an observation schedule.
To reinforce the model.	The students put on the arm bands.
To generate post-test data for research question one.	The students work on a missile building project.
To reinforce the model.	The students take off the arm bands.
To reinforce the model.	The students talk about the helping during the project.
To generate post-test data for question two.	The teacher fills out a teacher assessment inventory.
To establish the behavior model to be observed and to reinforce the observing behaviors.	The teacher and the researcher confront the differences between the pre-test teacher assessment inventory and the post-test teacher assessment inventory.

The objectives above are stated in terms of student and teacher. While some are stated for the teacher, the basic teacher goal is to reinforce the student working together behavior being increased.

SUMMARY

In an earlier section of this study, it was stated that to be a micro-curriculum there must be a single learning

outcome as an objective. The implementation model used and presented here had as its major focus a single objective of increasing student interaction behavior patterns. What has been developed in this chapter is the independent variable used in the field study. The dependent variable, the social interaction patterns of nine elementary school age hearing impaired children at The American School in Hartford, Connecticut was the target for the independent variable described here.

Chapter IV presents the research design of the exploratory field study conducted at The American School. The design and the instruments used to collect the data referred to in this chapter are presented.

C H A P T E R I V

THE DESIGN OF THE STUDY

This chapter describes how the present study is organized to answer the research questions, describes the instruments, and outlines the conduction of the exploratory field study.

The research questions posed in Chapter I form the foundation of the design of the present study. (1) Does the micro-curriculum modify childrens' interaction patterns to change observations? (2) Are the children's interaction patterns modified enough to change the teacher's assessment of their patterns of working together?

For question one, the independent variable is the micro-curriculum. The dependent variable is the students' pattern of interaction. For question two, the independent variable is the children's interaction patterns. The dependent variable is the teacher's evaluation of the students' interaction patterns. Using Campbell and Stanley's definitions of experimental designs, the design of the present study would be classified as a pre-experimental design; one group pre-test, post-test design.[49]

Using the Campbell and Stanley format for graphically describing research designs, Figure One presents the design for the present study.

Figure 1

Diagram of the Research Design
Using the Campbell and Stanley Format

X	Y

Key: X = Pre-test data gathering

Y = Post-test data gathering

Campbell and Stanley list five potential invalidities for this research design: (1) The time between pre- and post-testing could allow history to modify the dependent variable as much as the independent variable. In the present study, the time span between the pre- and post-test was 24 hours. The shortness of the elapsed time suggests that history is not a confounding variable.

(2) Maturation is again an elapse time issue setting up biological and physiological maturation. Again the 24 hour time elapse period is not significant in the present situation. The interaction patterns recorded in the pre-test were the result of those nine students working together for one full school year. Twenty-four hours more would not

account for any significant modification of their interaction patterns. Thus, this is not a source of a confounding variable.

(3) The effect of repeated testing as a confounding variable on the surface seems to be a legitimate problem, except the observation and testing were designed to be a basic part of the treatment procedure of the micro-curriculum. Thus, the exploratory field study took advantage of this effect as a part of the curriculum itself. Thus, this confounding effect was accounted for in the study.

(4) Instrument decay as a confounding variable was accounted for by the pre- and post-test taking place in the morning and the same person observing both sessions. The observer was the same person who developed the observation schedule and categories; this is a potential confounding variable.

(5) Statistical regression as a confounding variable is not applicable in the present study because the students selected for the present study were selected by the principal as a representative class in that age group, not because they were selected for any extremity.[50] Thus, statistical regression is not an expected confounding variable.

The potential sources of confounding variables producing invalidity could be the experimentor taking observations and the testing and observational procedures being used as treatment procedures at the same time. Thus, the case for internal validity is good.

The external validity of the exploratory field study is more in question because of the sample. The sample group used for the exploratory field study were a class of nine, eleven and twelve year old hearing impaired students; four boys and five girls. The sample used, both students and the selected teacher are not established as a representative random sample. Also they are a small sample of the experimental population; too small to be considered statistically significant. Thus, the external validity is in question.

THE INSTRUMENTS

There were two instruments used for the field study; an observation schedule for observing the students' interaction behaviors, and the teacher assessment inventory used to record the teachers (pre-) expectations of students interaction behaviors and the teachers (post-) assessments of those behaviors witnessed.

These two instruments were designed and then pilot tested at The Amoskeag School for the Deaf in Manchester, New Hampshire. This school was chosen because it serviced elementary age children and had two classes including children ages nine through twelve. This school services multiply handicapped children. It was felt that if the categories worked there, they would include any behaviors that would be exhibited in a school servicing only hearing impaired children. More modification of the student observation categories was needed. The teacher assessment inventory

required no modification before use in the field study. Examples of both instruments can be found in Appendix B. The observation schedule is used to answer research question one. The teacher assessment inventory is used to answer question two.

The Observation Schedule of Student Interaction Behaviors

The design and development of observational procedures of interaction behavior, for this project, went through several modifications. Initially the following categories were utilized: communicating, working together or working alone, helping others, taking leadership. After the first run in the pilot testing of the observational procedures at The Amoskeag School, it became clear that a refinement of categories was desirable. For the second run at The Amoskeag School, the following categories were identified: random communication and communication about the task. This became clearly identifiable because random communication was that kind of behavior which occurred when a child wandered away from the project and started talking with an observer. Talking about the work was that kind of communication that one child carried on with another about what they were doing.

The next categories were working alone randomly, or working in a focused manner on the task, or working together with others on the task. The working alone randomly was a kind of frustration activity where they would take a task to

the side and develop something that had little or no relationship to what was going on with the others and never really bring it back. The working alone on the project activity was that kind of work where someone in agreement with others takes a task and works on it by himself so that it will later be integrated into the general project. Working together activity is when two or more children actually work together on the project. Problem-solving was added because it became very clear at times that some children would go over to others and help them work out a problem on their part of the task. Helping others remained and wandering away became another category of activity because at times children in their frustration would wander away and then distance themselves from the project as a way of dealing with their frustration. Leadership was that activity which occurred when a decision of major proportion was needed, and a child would bring the rest along to help him.

After the second pilot run of the micro-curriculum at The Amoskeag School, a further refinement of the observation categories resulted in the addition of looking over the task activities. This differed from wandering away activities in that it was not a distancing mechanism but an attempt to see the task in a larger perspective. Each time the treatment procedure was run at The Amoskeag School, it was discovered that there were behaviors which had not been identified prior to the pilot test. By the time the micro-curriculum was taken to The American School for the Deaf for the field testing, the following categories were established for use

in observing behaviors: random communication, work focused communicating, working alone on the project, working with peers on the project, focusing others, fighting, problem-solving, negotiating, random wandering, looking over the task, and direct leadership. Observation of behaviors associated with each category were made for each student every two minutes. The observed behavior was recorded on the observation check sheet in the form of a check mark for the appropriate category. These behaviors represent the dependent variable for the first research question.

Teacher Assessment Inventory

The teacher assessment inventory (TAI) asked the teacher to evaluate students on the following behaviors on a scale of one to five, one being low and five being high: isolated behavior, participation in group activities, ability to work collaboratively, propensity to work in isolation, ability to organize others, ability to respond to organization efforts of others. The following question was designed for an open ended comment: Does the child organize others in the class? The results of the teacher assessment scores on isolated behavior are intended to relate to working alone on student observations. The scores on the TAI for participation in group activities and ability to work collaboratively are related to working on the project with others on the observations of the students. The scores on the TAI question,

ability to organize, are related to focusing others on the student observation instruments. The question, ability to respond to organizational efforts of others for the TAI is related to problem-solving on student observations. The question, "does this child organize others in the class" included on the TAI is related to direct leadership on the observations list.

If there is a major discrepancy between the first and second administration of the TAI, this will indicate a modification of the teachers expectations for the student. These questions of teacher expectations represent the dependent variable for the second research question.

THE FIELD TEST

As stated previously, The American School for the Deaf in Hartford, Connecticut was chosen as the site for the field study. The American School is a well known institution with an excellent reputation for quality academic programs. The American School is not an institution about which one could say that student problems of social immaturity were a result of the low caliber of programs offered by the institution.

The contact for arranging field testing of the curriculum was the principal of the lower school. Arrangements were made for the curriculum to be tested in a classroom of eleven and twelve year old hearing impaired boys

and girls. There were nine students in the class, four boys and five girls. The sampled teacher has worked in deaf education for over ten years. Both the teacher and class were chosen by the principal for the field study because they were a "good class", one not having discipline problems that would confound the findings.

Arrangements were made to test the curriculum during the next to the last week of school. This insured that the class would have achieved its maximum in quantity and quality of interaction. The students would know each other and would have been working together in the class for at least a full school year. In that time, the teacher should have developed a maximum knowledge of the class. Thus, whatever improvement was to be achieved through the use of the micro-curriculum could not be viewed as a speeding up of the normal interaction patterns of a class at the beginning or middle of a school year.

Dr. Robert Gonzales of the Media Center at the University of Massachusetts agreed to function as the facilitator with the class. This was important because Dr. Gonzales is a proficient manual communicator and has impressive facility signing with hearing impaired children.

The investigator coordinated the activities for the field test and served as participant observer during the treatment activities. He had served as the coordinator and observer for the pilot studies at The Amoskeag School and was familiar with the student observation instruments.

This study was designed so that the experimental group will be its own control. As the first treatment took place, observations to gather data were made. At the time of the fourth treatment the final observations were taken.

As a means of achieving a reading on the validity of the work of the observer, a second data collection procedure was utilized. The teacher of the class used for this studywas asked to fill out a teacher assessment inventory for each child at the start and conclusion of the study program. The initial administration of the TAI measured her assessment of each student's behavior pattern in a group working situation. The final administration was a measure of the extent to which the initial assessments were modified by the behavior change of the students during the treatment procedures. The function of the teacher observations is to insure attending behavior that will yield a more sensitive response to the second administration of the TAI.

TAI data are an indication of at least two phenomena: (1) the increased sensitivity of the teacher to the behavior of each student; (2) the ability of the treatment procedure to modify the students' behavior enough to cause the teacher to modify her initial assessment rating of the students.

The data to be used for the purpose of this study are the observations taken during treatment periods one and three by the investigator. The second set of data to be used are the results of the teacher assessment inventories

for each student taken before the first and after the third treatment periods. These data were reviewed with the teacher to check for clarity of the response.

SUMMARY

This chapter has presented the design of the study to modify the childrens interaction patterns. The observation procedure and teacher assessment inventory were developed to collect data on the dependent variables of the two research questions while the curriculum is the independent variable in the research question.

Chapter V presents the data from the observations and the TAI. A simple comparison of the before and after data with a correlation between the observations and the TAI are also presented.

C H A P T E R V

THE RESULTS OF THE FIELD TEST

This chapter presents the data from the field test for the purpose of answering the two research questions posed in Chapter I.

The data from the field test are presented in the following sequence:

1. Data from the observations.
2. Data from the teacher assessment inventory.
3. Analysis of selected items from the observations and the TAI.
4. Data from the TAI and from the students debriefing which focused on a sociometric rating.
5. A comparison of data from the observations, the TAI, and the teacher and student sociometric ratings.

The data presented here are taken from a sample of nine students and one teacher. The data were summarized as raw score means.

THE DATA FROM THE OBSERVATIONS

These data are used to answer the first research question: Does the micro-curriculum modify observations of the childrens' interaction patterns?

The data from the observations are presented as raw scores and raw score means. The range of point change for any one item for any one student went from 0-12 points.

The observer recorded data in eleven categories for each of nine students. (Random communication, work focused communication, working alone on the project, working with peers on the project, fighting, focusing others, problem-solving, negotiating, wandering away, looking over the task, and direct leadership.)

The data are computed on the basis of the difference between pre- and post-test number of observations for each student for each item.

The recorded behavior observations data have been organized into tables (Tables 1-6) which show the total point change for each student for each item, the mean point gain for each student for all behavior categories, the mean point gain for all students for each behavior category, the percentage of items changed for each student, the percentage of students whose observations were modified for each item and mean point gains for the group on each item and all items as well as the percentage of students whose observation changed for each item and the percentage of observation items which changed for each student.

For the categories working randomly alone, fighting, random wandering, and wandering away, all were behaviors not used by the students in the field test. This indicates that for this group, these four categories of behavior are not appropriate. They were identified as useful behaviors in the

pilot study using multiply handicapped hearing impaired students. Given this outcome these four categories will not be used when analyzing data further.

Categories working alone on the project and working with peers on the project are both important since 100% of the students modified these behaviors (Table 1). Categories working alone on the project and random communication are significant in that they were eliminated completely from use (Table 2). Working with peers on the project was increased by a mean point value of seven, the greatest gain of all categories. These outcomes indicate that the behavior pattern moved from alone behavior to doing things together behavior. The pattern changed in the desired direction of the study.

Table 1

Behavior Categories Observed by Which 100% of the Students Were Modified in the Post-Test

Behavior Categories		Working Alone on Project	Working with Peers on Proj.
Students Observed	A	-6	12
	B	-2	6
	C	-5	7
	D	-6	2
	E	-3	3
	F	-1	7
	G	-5	9
	H	-2	9
	I	-4	8
Mean Point Gain		-3.7	7
Percent Students Inv.		100%	100%

Table 2

Behavior Categories Observed Which Were Eliminated from Use in the Post-Test

Behavior Categories		Working Alone on Proj.	Random Communication
Students Observed	A	-6	0
	B	-2	0
	C	-5	-1
	D	-6	0
	E	-3	0
	F	-1	0
	G	-5	-1
	H	-2	0
	I	-4	-1
Mean Point Gain		-3.7	3
Percent Students Invol.		100%	33%

Categories direct leadership, problem-solving, looking over the task, work focused communication and negotiating were all modified in the desired direction by 55% or more of the students.

Table 3

Behavior Categories Observed Which Were Modified by at Least 50% but not 100% of the Students

Behavior Categories		Problem-Solving	Looking Over the Task	Work Focused Communication	Negotiating
Students Observed	A	0	2	-1	0
	B	1	1	2	0
	C	1	2	3	1
	D	2	3	2	2
	E	1	2	0	2
	F	1	1	-1	0
	G	2	0	2	0
	H	0	-3	0	1
	I	1	1	-1	2
Mean Pt. Gain		1	1.6	1.4	.8
% Stu. Invol.		77%	88%	77%	55%

Focusing others had a 55% student involvement, but these students did not all modify their behavior in the same direction. As a result, direct leadership and focusing others did not change to any significant degree. This suggests that working together behavior does not increase telling and directing behavior. There is no data to indicate the nature of the relationship but only that there is a relationship.

Table 4

Behavior Categories Observed Which Were Not Modified to any Noteworthy Degree

Behavior Categories		Focusing Others	Direct Leadership
Students Observed	A	0	0
	B	1	-2
	C	-1	0
	D	-2	0
	E	2	0
	F	0	0
	G	0	0
	H	0	1
	I	1	0
Mean Point Gain		.7	.3
Percent Students Invol.		55%	22%

There was a 62 percent mean for categories modified by a student and a 67 percent mean for the percent of students modifying a category. This suggests that there was greater than 50% involvement of a student on greater than 50% of the categories. This indicates that a noteworthy behavior change took place between the first and the final treatment.

Table 5

The Percent of Categories Modified by the Students

Student	Percent Item Change as Observed for 9 Items
A	44%
B	77%
C	88%
D	77%
E	66%
F	55%
G	55%
H	55%
I	88%
Percent Students Involved	62%

Table 6

The Percent of Students Involved in Modifying Nine Observed Behavior Categories

Random Communication	33%
Work Focused Communication	77%
Working Alone on Project	100%
Working with Peers on Project	100%
Focusing Others	55%
Problem-Solving	77%
Negotiating	55%
Looking Over the Task	88%
Direct Leadership	22%
Percent of Students Changing Item	67%

From the previously cited data on the observed behavior categories, it is evident that negative working together behaviors were eliminated and positive working together behaviors were increased to a noteworthy degree.

The observed behavior data were collected for the purpose of answering the first research question: Does the micro-curriculum modify observations of the childrens' interaction patterns? The observed behavior data suggests that the micro-curriculum contributed to changing the number of observations for each behavior category which showed a change in observations.

THE "TEACHER ASSESSMENT INVENTORY" DATA

The TAI was used to collect data to answer the second research question: Are the childrens' interaction patterns modified enough to change the teacher's assessment of their patterns of working together?

The TAI recorded the teacher's assessments of the nine students prior to treatment and at the conclusion of treatment (Table 7). There are seven questions about students working together or not working together. For all seven questions there was mean of change of 1.1 per question with range from zero to four possible.

Table 8

TAI Questions on Which the Teacher Changed the Assessment of 58% to 88% of the Students

Ability to Respond to Organizing	66%
Does the Student Organize Others	66%
Does the Student Exhibit Isolating Behaviors	88%
Ability to Work Collaboratively	66%
Propensity to Work in Isolation	77%

Table 9

Questions on Which the Teacher Changed the Assessment of Fewer than 50% of the Students

Ability to Organize Others	44%
Participates in Group Activities	33%

The mean percent of student assessments by the teacher which were changed on the post-test administration was 62.85%. The mean of 63% of the responses to the assessment questions by the teacher on the post-test administration were changed to a more positive assessment of the students' interaction patterns. The data indicates that between the pre-test and the post-test, the teacher significantly changed her assessment of the students behavior. This suggests the possibility

that the micro-curriculum was related to the teacher assessment change. Research question two is thus answered in the affirmative. The data does suggest that the students behavior change is strong enough to modify the teacher's assessment of their interaction behavior patterns.

Behavior Observation Data and TAI Data Analysis

The behavior observation data and the TAI data, when analyzed by looking at those behavior observation items and the TAI questions which were focused on analogous behaviors, provide a check on the congruence of the observer's observations and the teacher's assessment changes. Since both research questions were answered in the affirmative, the correlation of the two sets of data will yield understanding of the degree to which they do agree. These two sets of data are related to each other in the same way the two research questions are related. If the first research question on the observer recording behavior changes produced strong results, then the TAI should also be positively changed to a similar degree. This would indicate that the teacher would have also observed the changes and changed her assessments.

Table 10 shows the mean change for those observations and assessments which imply a problem-solving function. Table 11 shows the mean change for those observations and assessments which imply a working together function.

Table 10

Mean Change for Problem-Solving Items on the TAI and Observations

Observations	% Involved	% Involved	TAI
Focusing Others on Project	55%	44%	Ability to Organize Others
Problem-Solving	77%	66%	Ability Respond Others Organizing
Negotiating	55%	66%	Does Stu. Organize Others

Table 11

Mean Change for Working Together Items on the TAI and Behavior Observations

Observations	% Involved	% Involved	TAI
Random Working Alone	0%	88%	Behavior Isolated
Working Alone on Project	100%	33%	Group Activities-Participates in
Working with Peers on Project	100%	66%	Ability to Work Collaboratively
		77%	Propensity Work in Isolation

Table 12 shows the mean percent of students involved in change for both behavior observations and TAI questions. The problem-solving function items and questions showed a 62% involvement for behavior observations changed and a 58% involvement for the questions changed. The working together functions showed a 66% involvement in change for both behavior observations and for TAI questions. For all items and questions in both categories, there was a 64% involvement in change for behavior observations and a 62% involvement in change for the TAI questions.

Table 12

Composite Mean for Problem-Solving and Working Together Items

	Behavior Observations	TAI
Problem-Solving Functions	62%	58%
Working Together Functions	66%	66%
All Items in Both Categories	64%	62%

This data indicates a positive relationship between what the observer recorded, and the results of the TAI in terms of the percent of students where observations and assessments were changed on the post-test. These results

suggest that both observer and teacher were reacting to the same interaction behavior patterns. This reinforces a positive answer for both questions.

SUMMARY

This chapter suggests that the objectives of the micro-curriculum for increasing the interaction behaviors of the students and modifying the teacher's assessments of the students' interaction behavior patterns were accomplished. Both research questions have been answered in the affirmative.

C H A P T E R V I

This chapter summarizes the study and presents the implications for theory and practical application in the classroom. The implications of the study center on the following topics: (1) expectancy theory, (2) the curriculum worker, (3) teacher training, (4) the classroom, (5) the classrooms of hearing impaired students, (6) further research.

SUMMARY OF THE STUDY

The present study centers on the problem of modifying the social environment which hearing impaired elementary school age children experience. The social ecology or educational environments of hearing impaired children often foster social isolation by means of teacher assessments and reinforcement behavior. The development of a curriculum which would alter the social ecology was the major purpose of the present study. To do this it was proposed to design a micro-curriculum which would modify the students interaction patterns to such a degree that the teaching expectations for interaction of the students would also be modified.

Two research questions guided the investigation: One, does the micro-curriculum contribute to modifications of observations of the childrens' interaction patterns? Two, are

the childrens' interaction patterns modified enough to change their teacher's assessment of their patterns of working together?

The above research questions gave shape to this exploratory research that was conducted at The American School for the Deaf. The study used a pre-test/post-test design with the first treatment procedure also being the pre-test. The design has substantial internal validity, but the design does not have external validity, because the sample used was not a random representation sample.

The results of the data collected in this exploratory study clearly indicate observations changed and teacher assessments changed in desired directions.

IMPLICATIONS FOR EXPECTANCY THEORY

This study, in its design of a methodology for intervening in the teacher behavior pattern reinforcing social immaturity, relied on the effects of expectations. The study set out to demonstrate that teacher assessments could be modified. The data demonstrates that that took place. However, the study does not go further and explore the ongoing effects of the changed teacher assessment.

A follow-up telephone interview of the teacher was done as a means of checking on the impact, if any, of the field study. The following days before the end of school, this teacher utilized the space ship as a focus for the class work. She developed activities around it and finally rebuilt

it with the class. At the same time, she probed for feelings and was observant of working together behavior.

This teacher clearly was using behavior used in the treatment process. This raises the question of whether or not it was the expectancy change, the experimental model or the fact that it was the end of school which was the causal force for this behavior. At this time, the best that can be said is that all three played some part.

IMPLICATIONS FOR THE CURRICULUM DEVELOPER

This study should raise questions for curriculum developers in two areas. The first is the legitimacy and possibility of developing curricula which will give control over the "unstated curriculum", the "hidden curriculum", the classroom milieu. The micro-curriculum begins to demonstrate that it is possible to intervene in the ecology of the classroom. The issue for curriculum is whether this should be included in the role of the professional curriculum developer. There is much concern in the literature over the existence of the "hidden curriculum" yet little evidence that any systematic work has taken place.

The second level of implication for the curriculum developer is who is to be served? Who is the client of the curriculum developer? Traditionally, only the student is seen as the client. Yet given all the evidence surrounding the phenomena of the "hidden curriculum", one must ask if the

intent of a curriculum ever gets to the student unchanged by the teacher. For those in curriculum, the issue is the teacher, as much as it is the student. No curriculum is teacher-proof. The micro-curriculum suggests for the curriculum developer that the teacher and the child are both important targets for meeting the needs of students.

If the "hidden curriculum" is within the scope of the curriculum developer's work, then the teacher is a client as much as the student is a client. This is an important new focus for the curriculum developer.

The use of social ecology as a component part of curricula developed for classrooms of the hearing impaired would have important implications for teacher training or retraining, classroom management, and pre-vocational training.

IMPLICATIONS FOR PRE- AND IN-SERVICE TEACHER TRAINING

One of the findings in the correlation of the behavior observation data and the TAI data suggested that when the teacher had focused on the behaviors being worked on, this focus was strong enough for the teacher to change the assessment of student behavior. In turn, after the field study, the teacher kept focusing on these behaviors with that class to the end of the school year, two weeks later.

One objective was to teach the teacher to attend to and identify the student interaction behaviors. This was not very different from the objective of teacher training programs. The objective of a teacher training program is

to teach a person to attend to and work with student behaviors. The micro-curriculum used a number of devices for focusing the teacher's attention on the desired behaviors. These devices could be functional in teacher training.

The use of an observation guide for the teacher as an attending device was demonstrated to be useful by the correlation behavior observation data and TAI data. This suggests that when training new teachers or retraining veteran teachers, an approach which will enable them to observe specific behaviors to be modeled, not used, eliminated, or added would be useful.

The use of a check list for guiding observations was used both with the teacher and with the students by using the teacher briefing and debriefing sessions and the use of the feeling and relationship matrix with the students.

The feeling relationship discs made a strong impression on the teacher in the field study. It seemed that for the first time the teacher had become focused on expression of feelings as a tool which could be used in that classroom. The teacher had been effectively focused on needs and issues of children not recognized during a full year of work with these children. The use of attending devices with teachers and with students could assist teachers in not getting locked into assessments of students which also lock students into counter-productive behavior. The implications of this could range from classroom management to academic work for students.

IMPLICATIONS FOR THE CLASSROOM

The micro-curriculum demonstrated that this approach to behavior change of students could be useful for teaching classroom management. Instruments like the feeling and relationship matrix used as a tool for focusing the students on their feelings and attitudes could be expanded upon. In the field study, while there was no solid research to document its effectiveness, there were the teachers assessment changes which suggested its effectiveness as an aid in getting some control of dimensions of the "hidden curriculum" in the classroom.

The use of affective tools in classrooms has in the past been viewed as a special event. The teacher in the field study was suggesting that the bridge and missile could have been an academic project and that the affective tools (feeling and relationship matrix discs, arm band ritual, and debriefing sessions) could be retained and yield a potentially higher level of learning.

The implication which was developed by the teacher was that classrooms in their academic focus could easily integrate most dimensions of the micro-curriculum.

IMPLICATIONS FOR THE CLASSROOMS OF THE HEARING IMPAIRED

The classroom for the hearing impaired was chosen for this study because the specific problem of social imma-

turity was so well described and identified. This use of a special education population does not of necessity limit the applicability of the study. The special setting was chosen because it dramatized the issues for the educator which the micro-curriculum highlights.

This study points some directions for classrooms of the hearing impaired. The review of literature for the present study revealed a tangle of problems for the adult deaf population which result from those servicing them as children not attending to their developmental task of social maturity.

When the behaviors of social maturity are broken down for study, the problem becomes more manageable. To increase the use of interaction behaviors of children should not be a major problem. Once the people working with these children understand that there is no physical or genetic reason why these children could not increase their social interaction, then the problem will be seen to be in the way we work with them and not in the children.

To do this, a number of actions are required. Teachers of the hearing impaired must begin to identify the problems of teaching their students in more discrete terms than the gross category of lack of communication capability. The communication and linguistic deprivations of hearing impaired children are so severe that the resulting problems become overwhelming. If those in deaf education would begin to focus teachers on discrete problems rather than gross descriptions of the problems teachers would be less overwhelmed.

They would then be able to focus on the whole by beginning with the pieces rather than beginning with the total set of problems. All the other implications previously mentioned also are applicable for classrooms of the hearing impaired.

The micro-curriculum stands as a model for those working with the hearing impaired, of one approach to reducing childrens' social immaturity.

There are few teachers working in these classrooms who were trained to do so. Retraining is as critical an issue as initial training.

IMPLICATIONS FOR FURTHER RESEARCH

While the micro-curriculum did achieve an observed behavior change by the students and an assessment change by the teacher, there is need for further work. Work needs to be done to demonstrate whether or not the changes last and what can insure that they do last. Once the changes take place, what will determine their lasting potential?

A micro-curriculum study on a longitudinal basis could build in an ongoing reinforcement program which could establish the behavior change, reinforce the students' changes, and institute institutional behaviors which reinforce the student behavior changes. This would require that the micro-curriculum become integrated in the day to day curriculum package children are receiving. With the expanded curriculum integrated and still focused on both the teacher and student,

a follow-up assessment of social maturity as the students enter the work world would be a measure of the success of the curriculum.

The role that expectations, assessments of students abilities, plays in how a teacher uses and develops curriculum for a class would be the dependent variable to determine a procedure for modifying teacher expectations, with a teacher focused curriculum or treatment being the independent variable. Having once demonstrated that a teacher's focus in a curriculum is effective for modifying teacher expectations, it is important to demonstrate that a curriculum which is designed to service childrens' needs could do so by being focused on teacher expectations, and that the curriculum focused on teacher expectations was stronger in servicing children than the same curriculum without a focus on teacher expectations.

Further study would be useful to establish the importance of an intervention in the social ecology as a special event or an integrated part of the classroom life. This study utilized a special event intervention strategy.

The working together categories direct leadership, negotiating, and focusing others had mean point gains of .3, .7 and .8, and had a 55%, 22% student involvement while problem-solving, looking over the task, work focused communication, and working with peers had from a 7 to 3 mean point change and involved 100% of the students. It would be useful to know if overt aggressive leadership is congruent or not with problem-solving and working together behaviors. The data from the observations in this study suggest that

they are not congruent behaviors. If this were the case, then that information would be important when designing a curriculum to treat social immaturity. On the other hand, overt aggressive leadership may be behavior which is alien to the hearing impaired. If that were the situation, then a curriculum treating social immaturity would need stronger emphasis in developing overt aggressive leadership. Further research would be useful to determine if overt aggressive leadership is congruent with problem-solving, working together behaviors, and whether it is an inherent characteristic of the hearing impaired to be weak in overt aggressive leadership behaviors.

Further research would be useful in determining the extent to which the components of the micro-curriculum could be successfully used on a daily basis for classroom management purposes. Would the use of feeling relationship matrix discs and debriefing sessions focused on affective issues following classroom activities enhance cognitive learning? The micro-curriculum did not attempt to look at the relationship between the social ecology and the quality of cognitive learning taking place.

It has been established that there are some relationships between cognitive development and affective development. The establishment of the nature of that relationship in the process of learning would be valuable in developing curriculum for dealing with the social ecology.

This study has opened a number of implications for further research; the need for a longitudinal study of the

learning carryover from the micro-curriculum, the need for exploring the use of the micro-curriculum as an integrated component on a daily basis, the role expectations play in teachers' development of cognitive and unstated curriculum, the need to further establish the optimum intervention strategy for a micro-curriculum, the need to establish a more precise understanding of the nature of overt aggressive leadership behaviors, the need to explore the use of micro-curriculum components for classroom management, and to establish the precise nature of the relationship between cognitive learning and the social ecology of classrooms.

SUMMARY

This was an exploratory study that points directions for those working on the development of curriculum to focus on issues of the hidden curriculum. Specifically, it indicates direction for those working with hearing impaired students to help children improve their ability to relate socially to their peers. Improving these skills will better prepare the hearing impaired for living a rewarding and productive life.

The questions of student interaction behaviors being observed to change and of teacher assessment of student interaction behavior changing on a pre- and post-test with the micro-curriculum as the independent variable, have been answered. The data suggest that the curriculum was an in-

fluence for changing observations of student interaction behavior and for changing teacher assessment of student interaction behavior.

FOOTNOTES

[1]Marvin B. Sussman, Sociological Theory and Deafness: Problems and Prospects, Research on Behavioral Aspects of Deafness, Proceedings of a Natural Research Conference on Behavioral Aspects of Deafness, 1965, Washington, D. C., U. S. Department of Health Education and Welfare, 1965, pp. 40-41.

[2]Teachers referred to all worked with 9-12 year old hearing impaired children in their own classroom, and the generalizations they verbalized were developed from their own experience. These teachers worked in the following schools: The American School, Hartford, Connecticut; The Austine School, Brattleboro, Vermont; The Amoskeag School, Manchester, New Hampshire; The Crotched Mountain Center, New Hampshire; and The Willey Ross School, Longmeadow, Massachusetts.

[3]Hilde S. Schlesinger and Kathryn P. Meadow, Development of Maturity in Deaf Children, Exceptional Children, February, 1972, p. 466.

[4]J. Stuart Maclure, "Curriculum Innovation in Practice", A Report of the Third International Curriculum Conference, 1967, London, UK, Her Majesty's Stationers Office, 1968, pp. 7-9.

[5]George J. Posner, "The Extensiveness of Curriculum Structure: A Conceptual Scheme", Review of Educational Research, Fall, 1974, Vol. 44, #4, pp. 401-402.

[6]Ibid, pp. 405-409.

[7]Ibid, pp. 405-406.

[8]Harry Stack-Sullivan, "The Interpersonal Theory of Psychiatry", New York, W. W. Norton and Company, 1953, pp. 245-262.

[9]Erick H. Erikson, "Identity: Youth and Crisis", New York, W. W. Norton and Company, 1968, p. 126.

[10]Harry Stack-Sullivan, "The Interpersonal Theory of Psychiatry", New York, W. W. Norton and Company, 1953, pp. 245-262.

[11]Robert J. Havighurst, "Developmental Tasks and Education", New York, David McKay Company, 1972, pp. 22-23.

[12]William E. Davis, "III Case Study, The Vocational Rehabilitation of Deaf People: A Report of a Workshop on Rehabilitation Casework Standards for the Deaf", Washington, D. C., U. S. Department of Health, Education, and Welfare, Vocational Rehabilitation Administration, 1966, p. 55.

[13]Dr. Jerome D. Schein, "Social Services and the Deaf Client, The Deaf Man and the Law, Washington, D. C., Council of Organizations Serving the Deaf", 1970, p. 21.

[14]Mrs. R. Monica Clare, "The Part Played by the Teacher (of the Deaf) in the Development of Character and Social Training", Report of the Proceedings of Forty-Third Meeting of the Convention of American Instructors of the Deaf, Washington, D. C., U. S. Government Printing Office, 1968, p. 176.

[15]Robert Joseph Ferullo, "Parent-Teacher Relationships: Psychological Implications", Report of the Proceedings of the Forty-Third Meeting of the Convention of American Instructors of the Deaf, Washington, D. C., U. S. Government Printing Office, 1968, p. 208.

[16]McCay Vernon, "Personality Diagnosis of the Deaf: Symptomatology and Problems", Ibid., p. 337.

[17]John D. Rainer, "Crucial Aspects of Mental Health and Mental Disorders in the Deaf", Mental Health and the Deaf: Approaches and Prospects, Ed. Altshuler, Kenneth and Rainer, John D., Washington, D. C., U. S. Department of Health, Education and Welfare, 1968, p. 13.

[18]Sidney N. Hurwitz, "The Contribution of Social Work Practice to the Mental Health of the Hearing Impaired", Washington, D. D., Department of Health, Education, and Welfare, 1968, p. 68.

[19]William J. McClure, "Mental Health for the Deaf in the School Setting", Washington, D. C., U. S. Department of Health, Education and Welfare, 1968, p. 85.

[20]Marvin B. Sussman, Sociological Theory and Deafness: Problems and Prospects, Research on Behavioral Aspects of Deafness, Proceedings of a Natural Research Conference on Behavioral Aspects of Deafness, 1965, Washington, D. C., U. S. Department of Health, Education and Welfare, 1965, pp. 40-41.

[21]Frank B. Withrow, Current Studies of Personal Adjustment of Deaf People, Ibid., p. 54.

[22]William Gellman, Vocational Adjustment and Guidance of Deaf People, Ibid., p. 65.

[23]William Gellman, Ibid., p. 71.

[24]Dr. Homer D. Babbidge, Ed., Education of the Deaf: A Report to the Secretary of Health Education and Welfare by His Advisory Committee on the Education of the Deaf, Washington, D. C., U. S. Department of Health, Education and Welfare, 1965, pp. 22-24.

[25]Hilde S. Schlesinger and Kathryn P. Meadow, Development of Maturity in Deaf Children, Exceptional Children, February, 1972, p. 466.

[26]David Spidal and Vivian Sheridan, The Child in the Process: Affecting His Potential Through Life, American Annals of the Deaf, Vol. 117; No. 5, October, 1972, p. 523.

[27]Webster's New Collegiate Dictionary, G. & C. Merriam Company, 1956, Springfield, Massachusetts.

[28]Philip W. Jackson, "Life in Classrooms", New York, Holt, Rinehart and Winston, Inc., 1968, pp. 120-121.

[29]Lawrence Kohlberg, The Moral Atmosphere of the School, the Unstudied Curriculum, Washington, D. C., Association for Supervision and Curriculum Development, NEA, 1970, pp. 120-121.

[30]Robert Rosenthal, Teacher Expectation and Pupil Learning, the Unstudied Curriculum, Washington, D. C., Ibid., pp. 70-71.

[31]Bruce Joyce, The Future Curriculum Worker, The Curriculum: Retrospect and Prospect, McClure, Robert, Ed., Chicago, University of Chicago Press, 1971, p. 342.

[32]John and Elaine Cummings, Ego and Milieu, Chicago Aldine, 1962, p. 20.

[33]John and Elaine Cummings, Ibid., pp. 246, 247, 271.

[34]Benson R. Snyder, "The Hidden Curriculum", Cambridge, MIT Press, 1971, p. 7.

[35]E. Auerswald, Families, Change, and the Ecological Prospective, Ferber, Mendelsohn, Napier Eds., The Book of Family Therapy, USA. Science House, 1972, pp. 686-690.

[36]Robert Sommer, Personal Space, Englewood Cliffs, Prentice-Hall, Inc., 1969, pp. 72-73.

[37]Martin E. P. Seligman, Learned Helplessness, Tape #14, North Hollywood, Ziff-Davis Publishing Company, 1973.

[38]David Rosenhand, Odyssey Into Lunacy, Tape #09, Ibid., 1973.

[39]Robert Rosenthal, "The Pygmalion Effect: What You Expect is What You Get", Tape #12, Ibid., 1974.

[40]Robert Rosenthal, "The Pgymalion Effects Lives", Psychology Today; Vol. 7: No. 4, September, 1973, pp. 56-63.

[41]Eleanor E. McAbee, The Development of Sex Differences. Stanford, Stanford University Press, 1966, pp. 62-63.

[42]L. Festinger, "A Theory of Cognitive Dissonance", Ibid., 1957.

[43]Barry McLaughlin, "Learning and Social Behavior", New York, The Free Press, 1971, pp. 205-207.

[44]Morton A. Lieberman, Irvin D. Xalom, Matthew B. Miles, "Education Groups: First Facts", New York, Basic Books, 1973; (or) Cartwright and Zarder, Ed., "Group Dynamics Research and Theory", Second Edition, Vincent, Illinois, 1960, p. 656.

[45]Dr. Robert Chin of Boston University, Department of Psychology, recommended the exploratory research design as one which he has used in his research.

[46]Anthony Rose, Martin Thommes, Terry Van Orshoven and Layne A. Longfellow, "The Feel Wheel; A Psychology Today Game", Del Mar, California, CRM Inc., 1972.

[47]Dr. Robert Gonzales served as a consultant on deafness and schooling of hearing impaired children. He also served as facilitator during the administration of the curriculum at The American School in Hartford, Connecticut. He functioned as facilitator because he understood hearing impaired children and he is an exceptionally proficient signer.

[48]Winthrop Puffer performed the tasks of the experimentor in the administration of the curriculum.

[49]Donald T. Campbell and Julian C. Stanley, "Experimental and Graphic-Experimental Designs for Research on Teaching", Ed., N. L. Gage, "Handbook of Research on Teaching", Rand McNally & Co., Chicago, 1963, pp. 177-182.

[50]Ibid., p. 181.

BIBLIOGRAPHY

Altshuler, Kenneth and Rainer, John D., Eds.
Mental Health and The Deaf: Approaches and Prospects, Washington, D. C., U. S. Department of Health, Education and Welfare, 1968.

American Education Research Journal
Vol. IX, No. 3, Summer, 1972.

Babbidge, Homer D., Ed.
Education of the Deaf: A Report to the Secretary of Health Education and Welfare by His Advisory Committee on the Education of the Deaf, Washington, D. C., U. S. Department of Health, Education and Welfare, 1965.

Cage, N. L.,
Handbook of Research on Teaching, Chicago, Rand McNally & Co., 1963.

Cartwright and Zarder, Ed.
"Group Dynamics Research and Theory", Second Edition, Vincent, Illinois, 1960.

Cummings, John and Elaine
Ego and Milieu, Chicago Aldine, 1962.

Davis, William E.
"III Case Study, The Vocational Rehabilitation of Deaf People: A Report of a Workshop on Rehabilitation Casework Standards for the Deaf", Washington, D. C., U. S. Department of Health, Education, and Welfare, Vocational Rehabilitation Administration, 1966.

Erikson, Erik H.
"Identity: Youth and Crisis", New York, W. W. Norton and Company, 1968.

Ferber, Andrew; Mendelsohn, Marilyn; Napier, Agustus, Ed.
The Book of Family Therapy, USA, Science House, 1972.

Festinger, L.
"A Theory of Cognitive Dissonance", Stanford, Stanford University Press, 1957.

Havighurst, Robert J.
"Developmental Tasks and Education," New York, David McKay Company, 1972.

Jackson, Philip W.
"Life in Classrooms", New York, Holt, Rinehart and Winston, Inc., 1968.

Lieberman, Morton A., Irvin D. Xalom, Matthew B. Miles
"Education Groups: First Facts", New York, Basic Books, 1973.

MacAbee, Eleanor E.
The Development of Sex Differences, Stanford, Stanford University Press, 1966.

McClure, Robert, Ed.
"The Curriculum: Retrospect and Propensity Change", University of Chicago Press, 1971.

McLaughlin, Barry
"Learning and Social Behavior", New York, The Free Press, 1971.

Overly, Norman V., Ed.
"The Unstudied Curriculum", Washington D. C., Association for Supervision and Curriculum Development NEA, 1970.

Psychology Today
Vol. 7: No. 4, (September) 1973.

Report on the Proceedings of the Forty-Third Meeting of the Convention of American Teachers of the Deaf
Washington, D. C., U. S. Government Printing Office, 1968.

Research on Behavioral Aspects of Deafness: Proceedings of a National Conference on Behavioral Aspects of Deafness
Washington, D. C., U. S. Department of Health Education and Welfare, 1965.

Rose, Anthony, Martin Thommes, Terry Van Orshoven and Layne A. Longfellow
"The Feel Wheel; A Psychology Today Game", Del Mar, California, CRM, Inc., 1972.

Rosenhand, David
Odyssey Into Lunacy, Tape #09, North Hollywood, Ziff-Davis Publishing Company, 1973.

Rosenthal, Robert
"The Pygmalion Effect: What You Expect is What You Get:, Tape #12, North Hollywood, Ziff-Davis Publishing Company, 1974.

Schein, Jerome D.
"Social Services and the Deaf Client: The Deaf Man and the Law", Washington, D. C., Council of Organizations Serving the Deaf, 1970.

Schlesinger, Hilde S., Kathryn P. Meadow
Development of Maturity in Deaf Children, Exceptional Children, February, 1972.

Seligman, Martin E. P.
Learned Helplessness, Tape #14, North Hollywood, Ziff-Davis Publishing Company, 1973.

Snyder, Benson R.
"The Hidden Curriculum", Cambridge, MIT Press, 1971.

Sommer, Robert
Personal Space, Englewood Cliffs, Prentice-Hall, Inc., 1969.

Stack-Sullivan, Harry
"The Interpersonal Theory of Psychiatry", New York, W. W. Norton and Company, 1953.

Webster's New Collegiate Dictionary
G. & C. Merriam Co., 1956, Springfield, Massachusetts.

APPENDIX A

Residual Hearing and Decibel Loss for Nine Students Used in the Field Study

Residual Hearing and Decibel Loss for Nine Students Used in the Field Study

	Residual Hearing		Decibel Loss	
Student	Right	Left	Right	Left
A	18	18	102	102
B	38	26	78	93
C	32	30	85	87
D	58	42	53	73
E	34	43	85	71
F	28	28	90	90
G	12	20	110	100
H	34	28	82	88
I	6	12	118	110

APPENDIX B

Observation Schedule Used to Observe Student Interaction Behavior Patterns

and

The Teacher Assessment Inventory

OBSERVATION SCHEDULE

Student	Random Communication	Work Focused Communication	Working Alone on Project	Working with Peers on Proj.	Fighting	Focusing Others	Problem-Solving	Negotiating	Wandering Away	Looking Over The Task	Direct Leadership	Mean Point Gain 9 Items	% Item Change for 9 Items
A													
B													
C													
D													
E													
F													
G													
H													
I													
Mean Pt. Gain 9 Items													
% Stu. Invol.													

TEACHER EXPECTANCY INVENTORY

Student's Name_____

Teacher's Name_____

Please rate this student 1 for low score and 5 for high score on each of the behaviors as you have observed.

1. Isolated behavior

   1 2 3 4 5

2. Participation in group activities

   1 2 3 4 5

3. Ability to work collaboratively

   1 2 3 4 5

4. Propensity to work in isolation

   1 2 3 4 5

5. Ability to organize others

   1 2 3 4 5

6. Ability to respond to organization efforts of others

   1 2 3 4 5

7. Does the child organize in the class

   1 2 3 4 5

8. Who is this child's friends in class? (Please give names.)

9. Who does this child have little or nothing to do with in class? (Please give names).